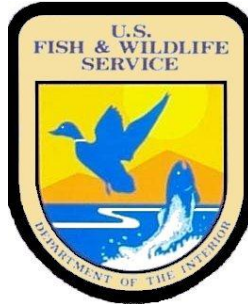


# **The Road Inventory of Deer Flat National Wildlife Refuge Nampa, ID**



Prepared By:  
Federal Highway Administration  
Central Federal Lands Highway Division  
April 2013



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## INTRODUCTION

The Transportation Equity Act for the 21<sup>st</sup> Century (Public Law 105-178) created the Refuge Roads Program. Refuge roads are those public roads that provide access to or within a unit of the National Wildlife Refuge System and for which title and maintenance responsibility is vested in the United States Government. Funds from the Highway Trust Fund are available for refuge roads and can be used by the station to pay the cost of:

- (a) Maintenance and improvements of refuge roads.
- (b) Maintenance and improvements of:
  - (1) Adjacent vehicle parking areas
  - (2) Provision for pedestrians and bicycles and
  - (3) Construction and reconstruction of roadside rest areas that are located in or adjacent to wildlife refuges
- (c) Administrative costs associated with such maintenance and improvements.

The funds available for refuge roads are to be disbursed based on the relative needs of the various refuges in the National Wildlife Refuge System, and taking into consideration:

- (a) The comprehensive conservation plan for each refuge;
- (b) The need for access as identified through land use planning; and
- (c) The impact of land use planning on existing transportation facilities.

To determine the relative needs of the U.S. Fish and Wildlife Service, the Federal Highway Administration (FHWA) was asked to inventory all public access roads and parking lots and provide a condition assessment of each. In 2008 the inventory was expanded to include administrative (service use only) roads and parking lots. An FHWA representative meets with refuge personnel to identify route segments and assign route numbers and functional classifications (See Appendix) for each route. All roads and parking lots are mapped using Trimble GPS units and visually assessed for condition using the RSL method of evaluation developed at Utah State University (See Appendix). Culverts, Gates, Guardrails and Low Water Crossings are also mapped and inspected for any obvious defects.

An estimate is provided, in year 2008 dollars, based on the condition determined by the rating system. Estimates are based upon data and location factors from the 2008 RS Means Heavy Construction Cost Data 22<sup>nd</sup> Annual Edition. Cost estimates should be evaluated on a case-by-case basis when being used for programming purposes.

Native Surfaced roads and parking lots already inventoried will not be re-inventoried and will not appear individually in report chapters 5, 6 and 8. Mileages and areas of native surfaced roads and parking lots will still appear in all summaries in the report and will remain in the road inventory database. In addition to this report, the FHWA will furnish the condition ratings of each route and segment to the Fish and Wildlife Service in a Microsoft Access database so the data can be included in their Real Property Inventory.

## Deer Flat NWR - 14560 Summaries

### Route Miles and Percentages by Functional Class and Condition

Condition Rating (Based on RSL)\*

F. C.	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
I	0.78	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.78
II	0.00	0.0%	0.47	72.3%	0.18	27.7%	0.00	0.0%	0.00	0.0%	0.65
III	0.00	0.0%	0.39	35.1%	0.72	64.9%	0.00	0.0%	0.00	0.0%	1.11
IV	0.22	71.0%	0.09	29.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.31
V	0.00	0.0%	10.03	92.9%	0.77	7.1%	0.00	0.0%	0.00	0.0%	10.80
<b>Totals</b>	<b>1.00</b>	<b>7.3%</b>	<b>10.98</b>	<b>80.4%</b>	<b>1.67</b>	<b>12.2%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.0%</b>	<b>13.65</b>

\*For a description of condition ratings for the various surface types see the Appendix.

### Route Miles and Percentages by Surface Type and Condition

Paved Condition Rating [Condition(RSL)]

Surface	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
AS	0.78	81.3%	0.00	0.0%	0.18	18.8%	0.00	0.0%	0.00	0.0%	0.96
CO	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
<b>Totals</b>	<b>0.78</b>	<b>81.3%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.18</b>	<b>18.8%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.96</b>

Unpaved Condition Rating [Condition(RSL)]

Surface	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
GR	0.22	2.5%	8.42	97.5%	0.00	0.0%	0.00	0.0%	0.00	0.0%	8.64
NA	0.00	0.0%	2.56	63.2%	1.49	36.8%	0.00	0.0%	0.00	0.0%	4.05
PR	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
<b>Totals</b>	<b>0.22</b>	<b>1.7%</b>	<b>10.98</b>	<b>86.5%</b>	<b>1.49</b>	<b>11.7%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.0%</b>	<b>12.69</b>

### Square Footage (Parking Areas)

Condition Rating

Surface	Excellent		Good		Fair		Poor		Failed		Total SQ FT
	SQ FT	%	SQ FT	%	SQ FT	%	SQ FT	%	SQ FT	%	
AS	101,206	25.4%	26,290	6.6%	203,715	51.1%	67,454	16.9%	0	0.0%	398,665
CO	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
GR	0	0.0%	47,675	71.4%	19,106	28.6%	0	0.0%	0	0.0%	66,781
NA	0	0.0%	35,557	100.0%	0	0.0%	0	0.0%	0	0.0%	35,557
PR	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
<b>Totals</b>	<b>101,206</b>	<b>20.2%</b>	<b>109,522</b>	<b>21.9%</b>	<b>222,821</b>	<b>44.5%</b>	<b>67,454</b>	<b>13.5%</b>	<b>0</b>	<b>0.0%</b>	<b>501,003</b>

## Deer Flat NWR - 14560 Summaries

### Route Miles and Percentages by Use Type and Condition

Road Condition Rating: Public/Administrative Use

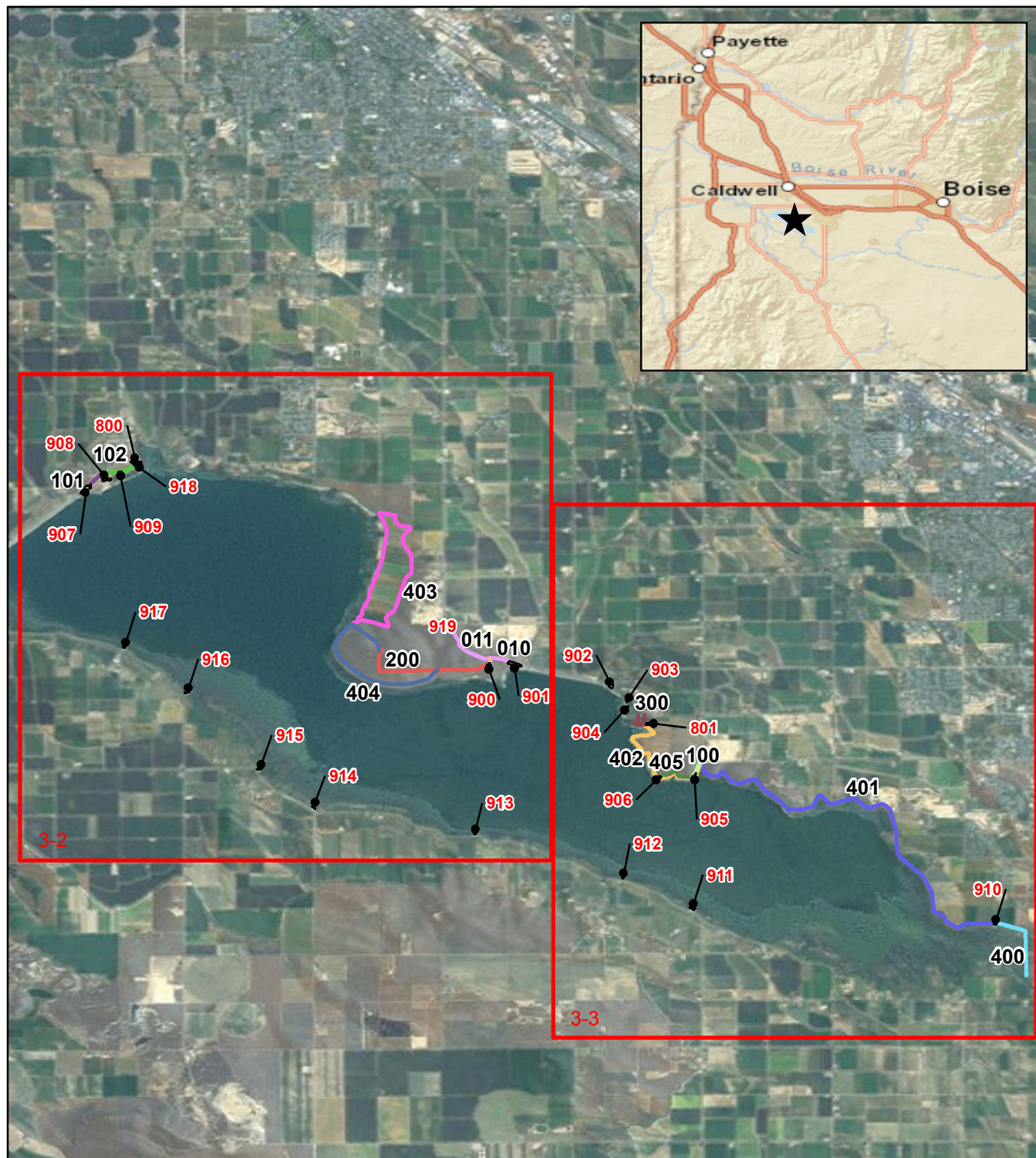
USE TYPE	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
Public (FC I-III)	0.78	30.7%	0.86	33.9%	0.90	35.4%	0.00	0.0%	0.00	0.0%	2.54
Admin (FC IV-V)	0.22	2.0%	10.12	91.1%	0.77	6.9%	0.00	0.0%	0.00	0.0%	11.11
Totals	1.00	7.3%	10.98	80.4%	1.67	12.2%	0.00	0.0%	0.00	0.0%	13.65

Parking Condition Rating: Public/Administrative Use

USE TYPE	Excellent		Good		Fair		Poor		Failed		Total Sq Ft
	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	
Public	101206	23.3%	42668	9.8%	222821	51.3%	67454	15.5%	0	0.0%	434,149
Admin	0	0.0%	66854	100.0%	0	0.0%	0	0.0%	0	0.0%	66,854
Totals	101,206	20.2%	109,522	21.9%	222,821	44.5%	67,454	13.5%	0	0.0%	501,003

# Deer Flat National Wildlife Refuge

## ROUTE LOCATION MAP



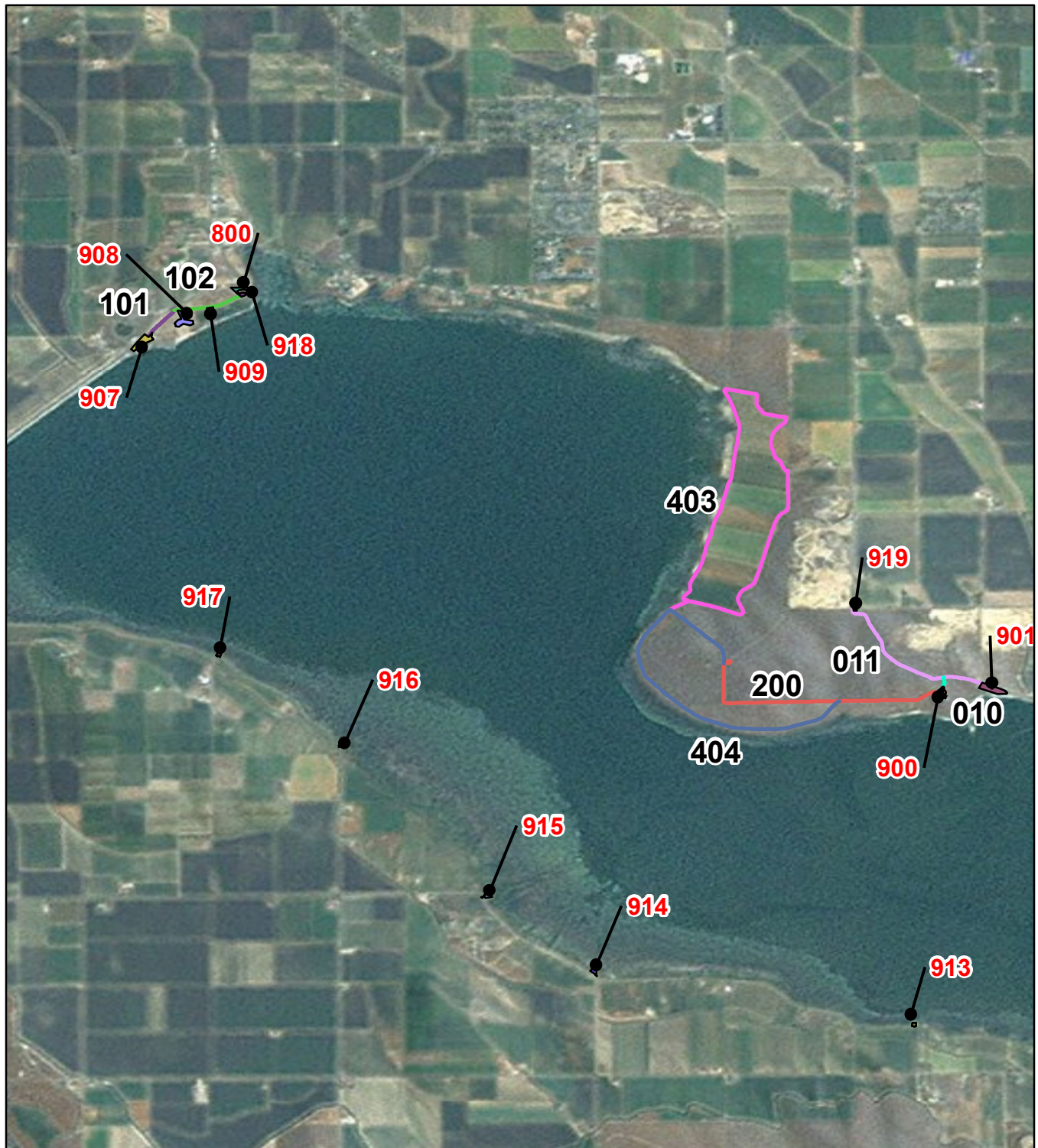
0 0.75 1.5 3 4.5 6 Miles





# Deer Flat National Wildlife Refuge

## ROUTE LOCATION MAP



0 0.4 0.8 1.6 2.4 3.2 Miles



# Deer Flat National Wildlife Refuge

## ROUTE LOCATION MAP



0 0.375 0.75 1.5 2.25 3 Miles



**Deer Flat NWR - 14560**  
**Route Identification List**

Shading Color Key:

White = Paved Routes
Yellow = Unpaved Routes

RTE #	Asset Number	ROUTE NAME	RTE MI	ROUTE DESCRIPTION	PAVED MI	UN-PAVED MI	LANES	FC
010	10045346	Entrance Road	0.05	From Upper Embankment Road (Route 011) to Visitor Center Parking (Route 900)	0.05	-	2	1
011	10061649	Upper Embankment Road	0.73	From Indiana Road to Upper Dam West Parking (Route 901)	0.73	-	2	1
100	10045323	Gott's Point Road	0.19	From Greenhurst Road to Gott's Point Service Road (Route 405)	-	0.19	2	2
101	10050907	Lower Dam Boat Ramp Access Road	0.18	From Riverside Road to Lower Dam Boat Ramp Parking (Route 907)	0.18	-	2	2
102	10050908	Lower Dam Youth Camp Access Road	0.28	From Lower Dam Boat Ramp Access Road (Route 101) to Environmental Education Parking (Route 918)	-	0.28	2	2
200	10065135	Obsevation Hill Trail Road	1.11	From Visitor Center Parking (Route 900) to observation point	-	1.11	1	3
300	10045323	Shop Access Road	0.31	From Iowa Avenue to Iowa Avenue	-	0.31	2	4
400	-	East Dike Administrative Road	0.71	From Tio Lane Parking (Route 910) to end of route	-	0.71	1	5
401	10005316	Kingfisher Trail Administrative Road	3.75	From Tio Lane Parking (Route 910) to Patrol Road (Route 402)	-	3.75	1	5
402	10005316	Patrol Road	1.35	From Gott's Point Road (Route 100) to Shop Access Road (Route 300)	-	1.35	1	5
403	10005316	Field 5 Access Road	2.99	From Observation Hill Trail Access Road (Route 404) to end of loop	-	2.99	1	5
404	10005316	Observation Hill Trail Access Road	1.69	From Observation Hill Trail Road (Route 200) to Ovsevation Hill Trail Road (Route 200)	-	1.69	1	5
405	10045323	Gott's Point Service Road	0.31	From Gott's Point Road (Route 100) to Gott's Point Parking #2 (Route 906)	-	0.31	1	5

**Deer Flat NWR - 14560**  
**Route Identification List (Parking)**

Shading Color Key:

White = Paved Routes
Green = Unpaved Routes

Route #	Asset Number	ROUTE NAME	Area (Sq Ft)	ROUTE DESCRIPTION	Surface Type
800	-	Environmental Education Rear Parking	35,557	From Environmental Education Parking (Route 918)	Native
801	10053584	Shop Parking	31,297	From Shop Access Road (Route 300)	Gravel
900	10042373	Visitor Center Parking	23,774	From Entrance Road (Route 010)	Asphalt
901	10042374	Upper Dam West Parking	84,804	From Upper Embankment Road (Route 011)	Asphalt
902	10042375	Upper Dam East Parking	31,077	From Lake Avenue	Asphalt
903	10042376	Iowa Ave Parking #1	4,445	From Iowa Avenue	Asphalt
904	10042377	Iowa Ave Parking #2	3,219	From Iowa Avenue	Asphalt
905	10042378	Gott's Point Parking #1	6,249	From Gott's Point Road (Route 100)	Gravel
906	10042379	Gott's Point Parking #2	12,857	From Gott's Point Service Road (Route 405)	Gravel
907	10005337	Lower Dam Boat Ramp Parking	75,936	From Lower Dam Boat Ramp Access Road (Route 101)	Asphalt
908	10005338	Lower Dam Beach Parking	67,454	From Lower Dam Youth Camp Access Road (Route 102)	Asphalt
909	10042380	Lower Dam Picnic Area Parking	3,143	From Lower Dam Youth Camp Access Road (Route 102)	Gravel
910	10050909	Tio Lane Parking	8,150	From Tio Lane	Asphalt
911	10005336	Lake Shore Drive Parking #1	23,071	From Lake Shore Drive	Asphalt
912	10005336	Lake Shore Drive Parking #2	8,383	From Lake Shore Drive	Asphalt
913	10005336	Lake Shore Drive Parking #3	9,069	From Lake Shore Drive	Asphalt
914	10005336	Lake Shore Drive Parking #4	15,523	From Lake Shore Drive	Asphalt
915	10005336	Lake Shore Drive Parking #5	14,130	From Lake Shore Drive	Asphalt
916	10005336	Lake Shore Drive Parking #6	11,384	From Lake Shore Drive	Asphalt
917	10005336	Lake Shore Drive Parking #7	11,898	From Lake Shore Drive	Asphalt
918	-	Environmental Education Parking	13,235	From Lower Dam Youth Camp Access Road (Route 102)	Gravel
919	-	Upper Entrance Parking	6,348	From Upper Embankment Road (Route 011)	Asphalt

**CHANGES TO THE FISH AND WILDLIFE SERVICE ROAD INVENTORY REPORT**

**Deer Flat NWR**

Routes added to previous inventory:		
Rte #	Rte Name	Reason For Addition
11	Upper Embankment Road	New Public Route
200	Observation Hill Trail Road	New Public Route
300	Shop Access Road	New Administrative Route
400	East Dike Administrative Road	New Administrative Route
401	Kingfisher Trail Administrative Road	New Administrative Route
402	Patrol Road	New Administrative Route
403	Field 5 Access Road	New Administrative Route
404	Observation Hill Trail Access Road	New Administrative Route
405	Gott's Point Service Road	New Administrative Route
800	Environmental Education Rear Parking	New Administrative Route
801	Shop Parking	New Administrative Route

Routes removed from previous inventory:		
Rte #	Rte Name	Reason For Removal

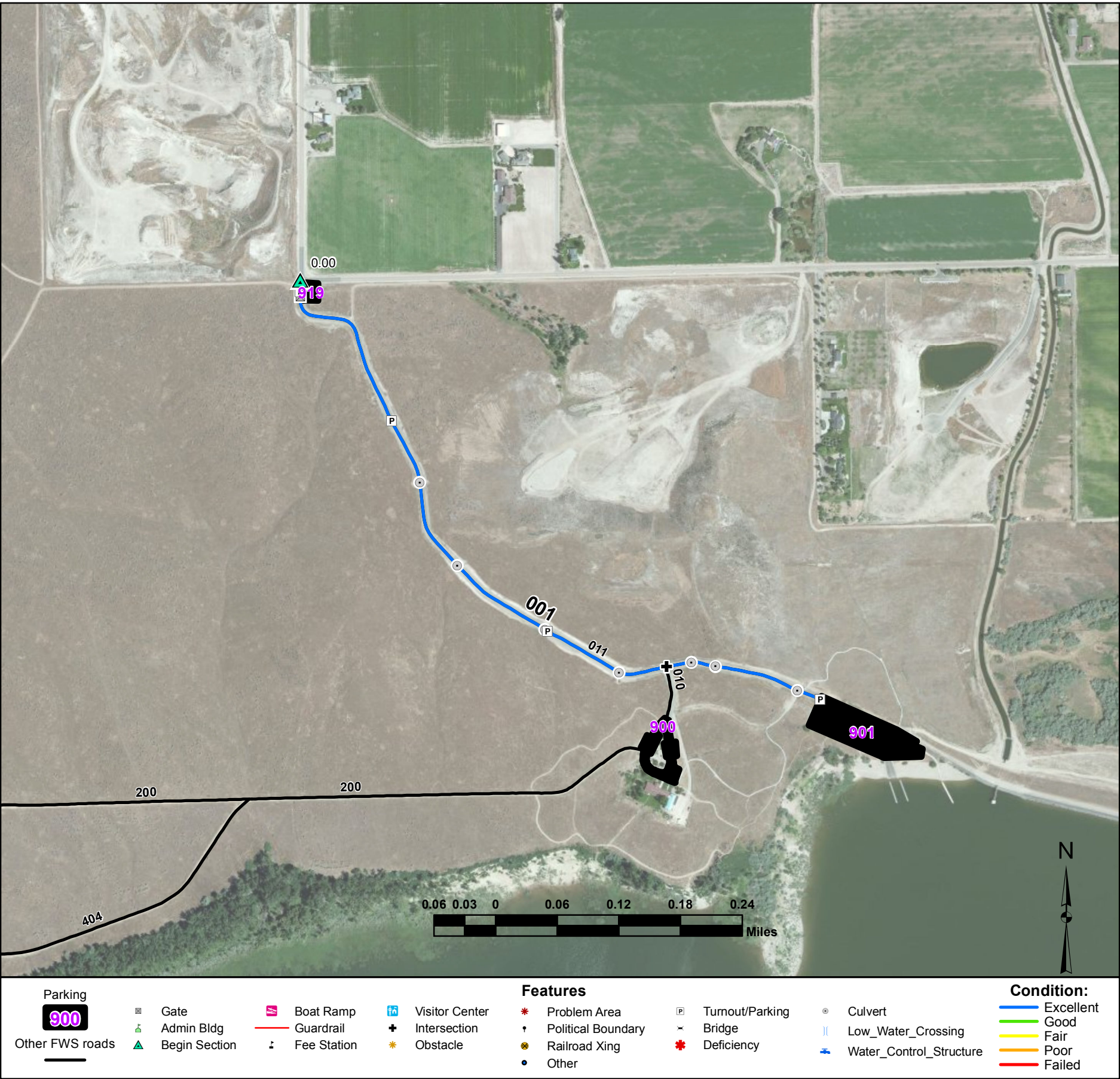
Routes modified from previous inventory:			
Rte #	Rte Name	Type of Modification	Description of Modification
10	Entrance Road	New Geometry	
100	Gott's Point Road	New Geometry	
900	Visitor Center Parking	New Geometry	
903	Iowa Ave Parking # 1	Surface Change	
904	Iowa Ave Parking # 2	Surface Change	
910	Tio Lane Parking	Surface Change	
911	Lake Shore Drive Parking # 1	Geometry and Surface Changed	
912	Lake Shore Drive Parking # 2	Geometry and Surface Changed	
913	Lake Shore Drive Parking # 3	Geometry and Surface Changed	
914	Lake Shore Drive Parking # 4	Geometry and Surface Changed	
915	Lake Shore Drive Parking # 5	Geometry and Surface Changed	
916	Lake Shore Drive Parking # 6	Geometry and Surface Changed	
917	Lake Shore Drive Parking # 7	Geometry and Surface Changed	

Comments:









Upper Embankment Road

From Indiana Road to Upper Dam West Parking (Route 901)

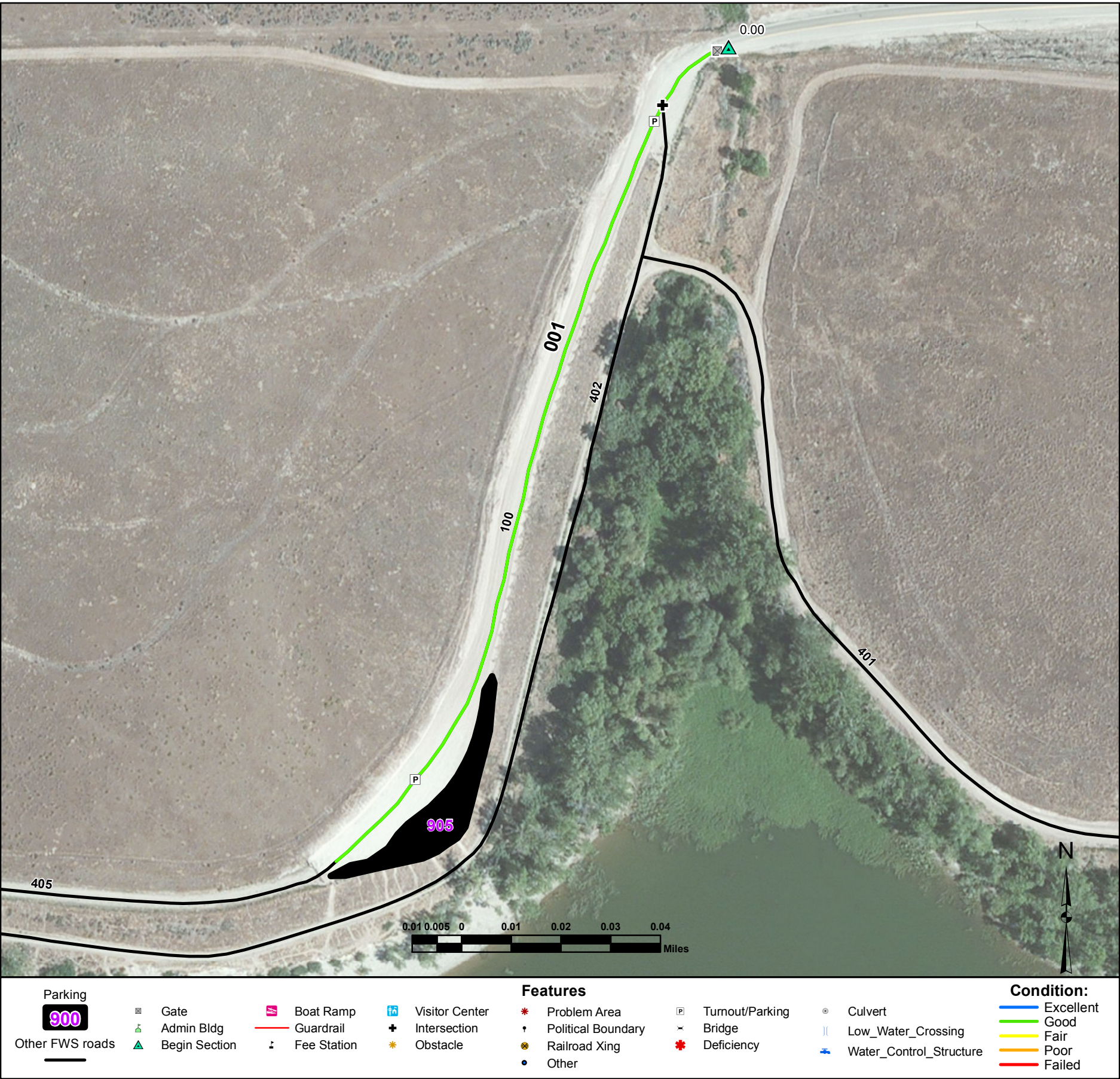
Route Number: 011

Total Route Mileage: 0.73

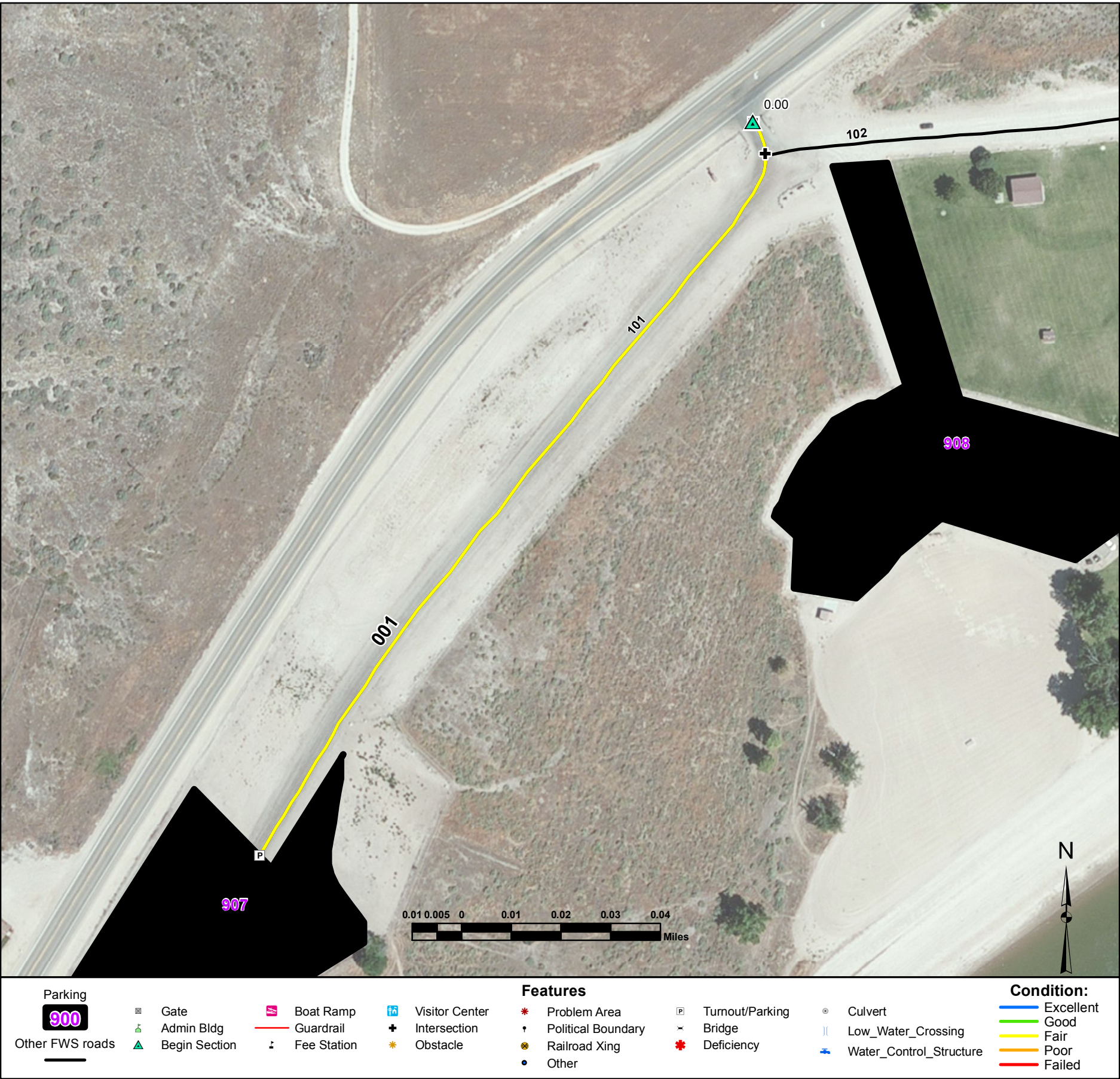
Asset Number	10061649				
Section Number	001				
Section Length (miles)	0.73				
Inspection Date	03-12-2013				
Surface Type	Asphalt				
Number of Lanes	2				
Roadway Width (feet)	24				
Condition	Excellent				
Remaining Service Life (years)	20				
Estimated Cost to Repair	\$0				
Current Replacement Value	\$890,800				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Turnout/Parking	001-0.01						
Gate	001-0.01						
Turnout/Parking	001-0.17						
Culvert	001-0.23						
Culvert	001-0.31						
Culvert	001-0.42						
Turnout/Parking	001-0.42						
Culvert	001-0.51						
Intersection	001-0.56						
Culvert	001-0.59						
Culvert	001-0.61						
Culvert	001-0.7						
Turnout/Parking	001-0.73						

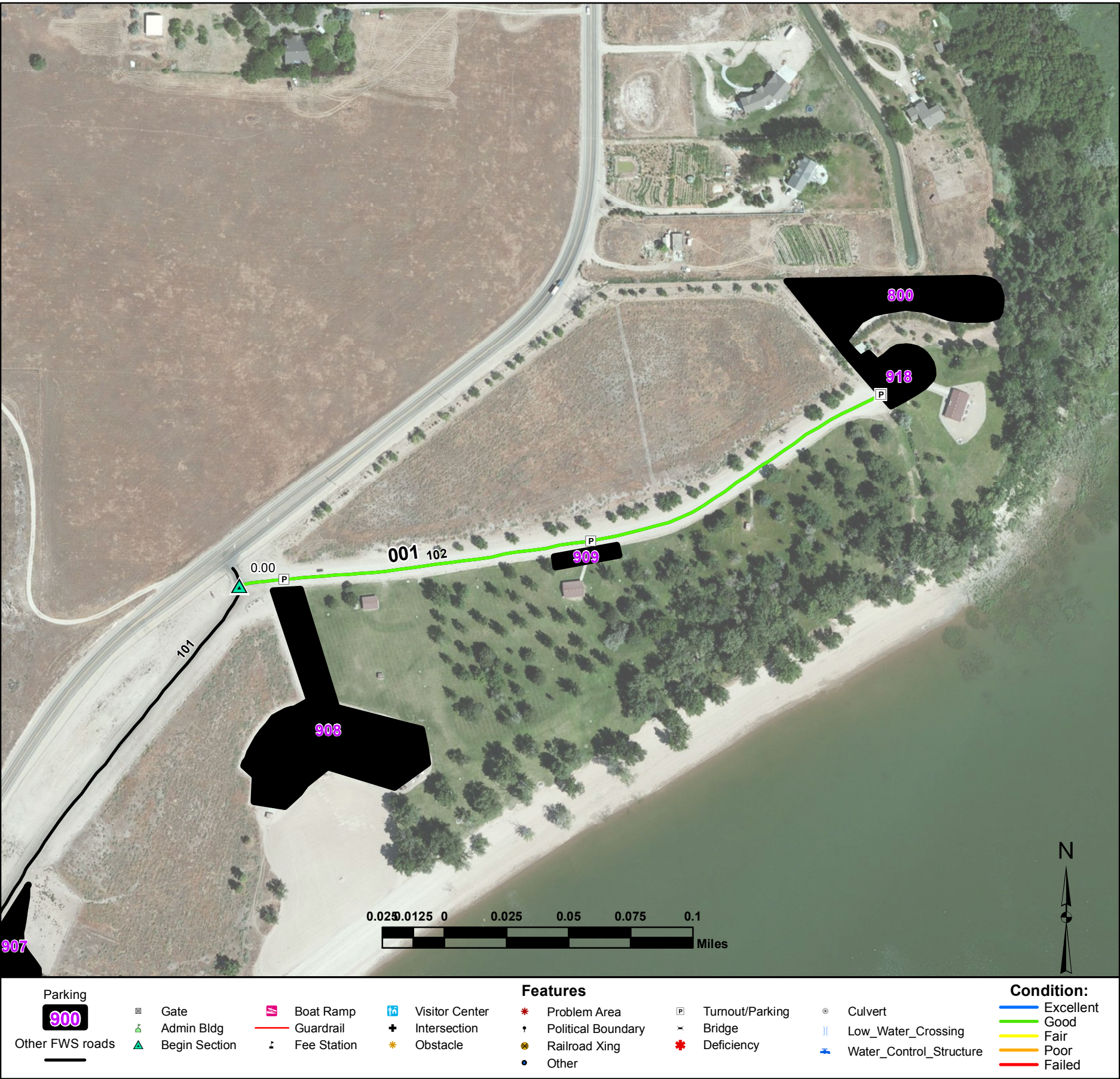












### Lower Dam Youth Camp Access Road

From Lower Dam Boat Ramp Access Road (Route 101) to Environmental Education Parking (Route 918)

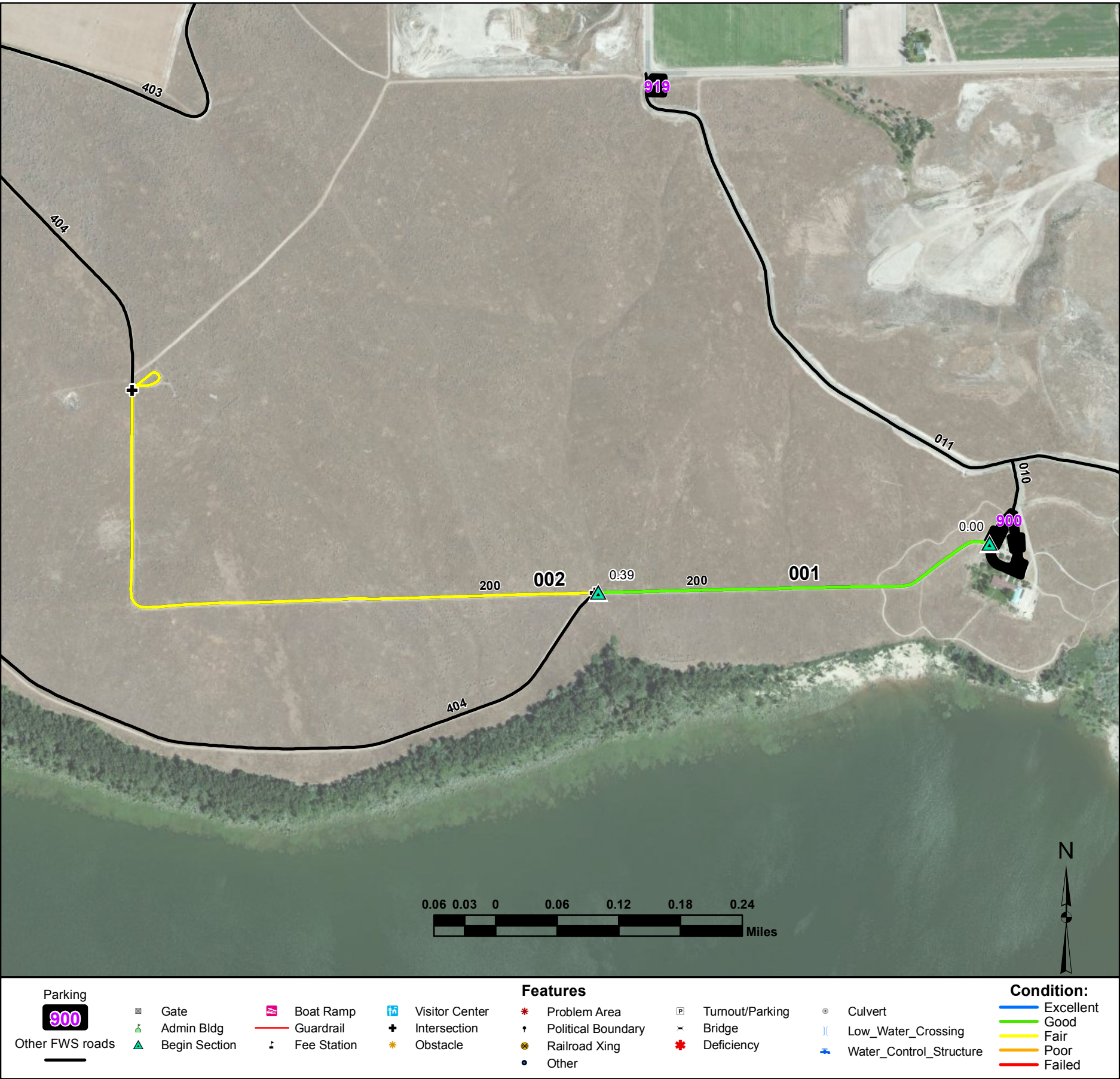
Route Number: 102

Total Route Mileage: 0.28

Asset Number	10050908				
Section Number	001				
Section Length (miles)	0.28				
Inspection Date	03-12-2013				
Surface Type	Gravel				
Number of Lanes	2				
Roadway Width (feet)	42				
Condition	Good				
Remaining Service Life (years)	7				
Estimated Cost to Repair	\$500				
Current Replacement Value	\$197,000				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Turnout/Parking	001-0.02						
Turnout/Parking	001-0.15						
Turnout/Parking	001-0.28						
Gate	001-0.28						









Shop Access Road

From Iowa Avenue to Iowa Avenue

Route Number: 300

Total Route Mileage: 0.31

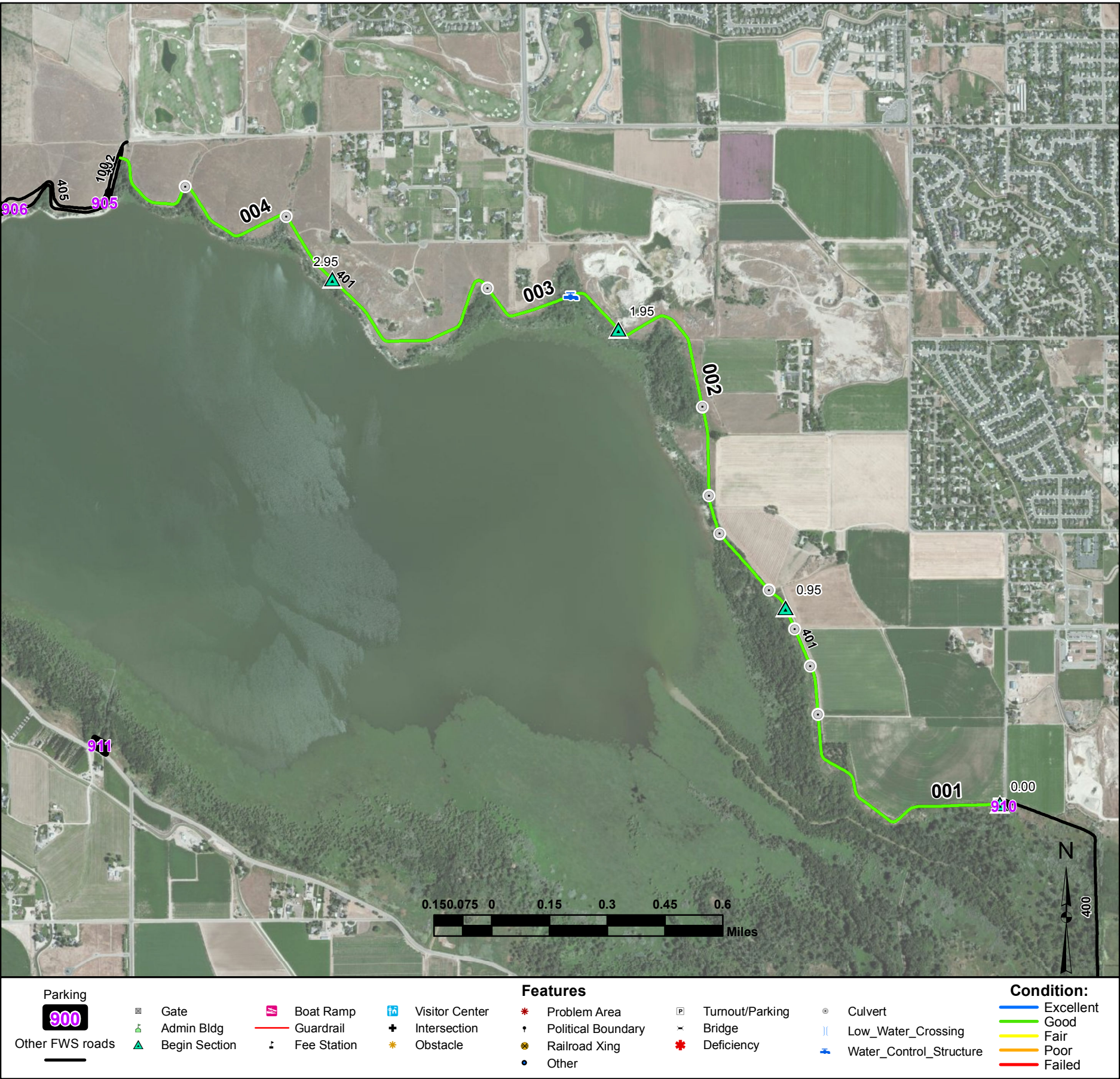
Asset Number	10045323	10045323	10045323		
Section Number	001	002	003		
Section Length (miles)	0.12	0.09	0.10		
Inspection Date	03-12-2013	03-12-2013	03-12-2013		
Surface Type	Gravel	Gravel	Gravel		
Number of Lanes	2	1	1		
Roadway Width (feet)	18	12	12		
Condition	Excellent	Good	Excellent		
Remaining Service Life (years)	10	5	9		
Estimated Cost to Repair	\$0	\$100	\$0		
Current Replacement Value	\$84,400	\$63,300	\$70,300		

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Gate	001-0.0						
Turnout/Parking	001-0.07						
Intersection	001-0.1						
Turnout/Parking	001-0.12						
Begin Section	002-0.1						
Begin Section	003-0.14						
Gate	003-0.17						
Gate	003-0.25						

















Field 5 Access Road

From Observation Hill Trail Access Road (Route 404) to end of loop

Route Number: 403

Total Route Mileage: 2.99

Asset Number	10005316	10005316	10005316	10005316	
Section Number	001	002	003	004	
Section Length (miles)	0.97	0.17	0.97	0.88	
Inspection Date	03-12-2013	03-12-2013	03-12-2013	03-12-2013	
Surface Type	Gravel	Gravel	Native	Native	
Number of Lanes	1	1	1	1	
Roadway Width (feet)	12	14	12	12	
Condition	Good	Good	Good	Good	
Remaining Service Life (years)	7	7	5	5	
Estimated Cost to Repair	\$1,600	\$300	\$1,700	\$1,500	
Current Replacement Value	\$682,300	\$119,600	\$353,000	\$320,200	

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Begin Section	002-0.97						
Gate	002-1.14						
Begin Section	003-1.13						
Culvert	003-1.18						
Culvert	003-1.82						
Culvert	003-2.01						
Begin Section	004-2.1						
Culvert	004-2.28						

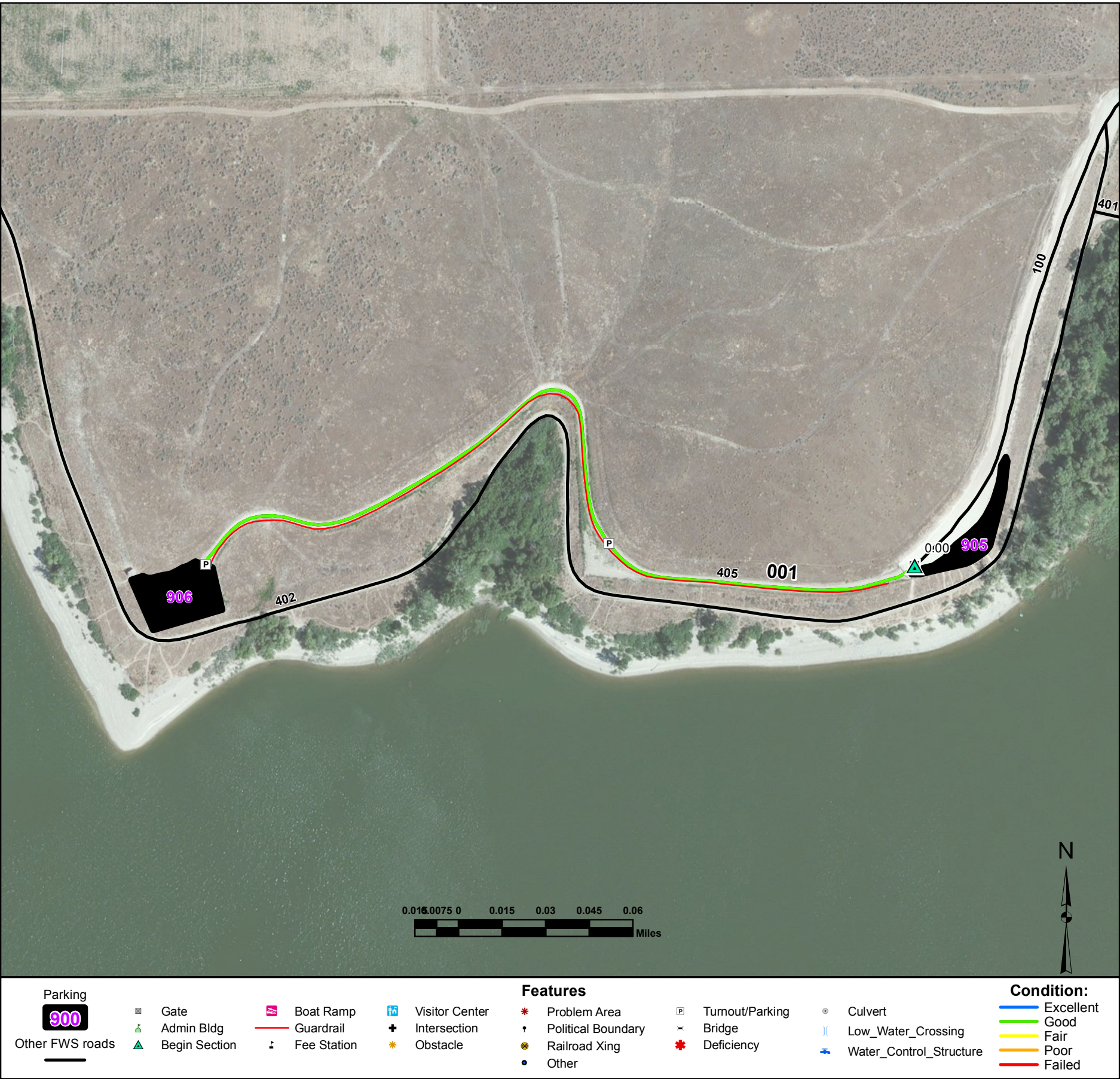








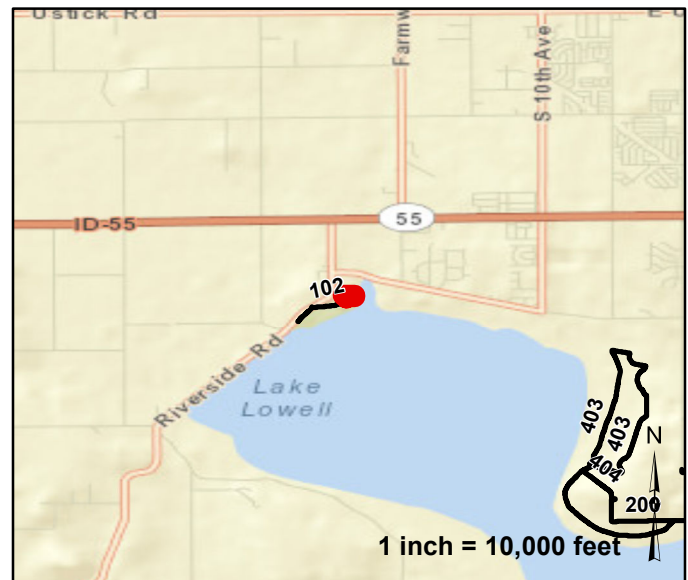
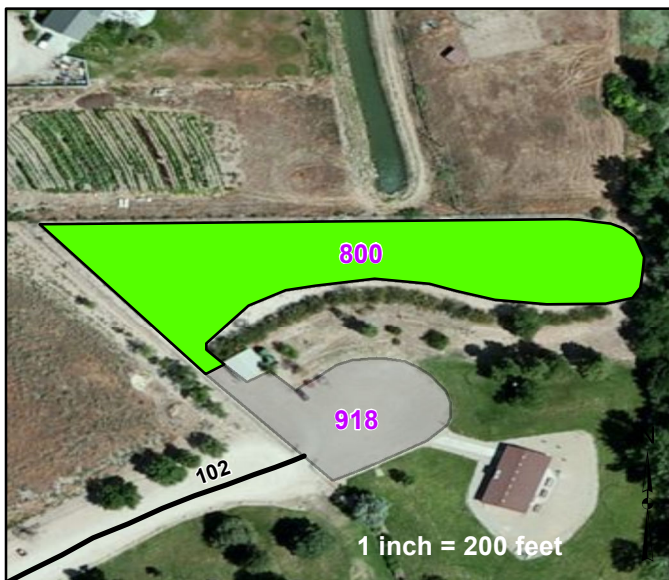






**Route Number: 800**  
**Environmental Education Rear Parking**  
 From Environmental Education Parking (Route 918)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	35557	25	Good	Native	\$5,400	03-12-2013	\$77,400



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
	Other FWS roads		Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed

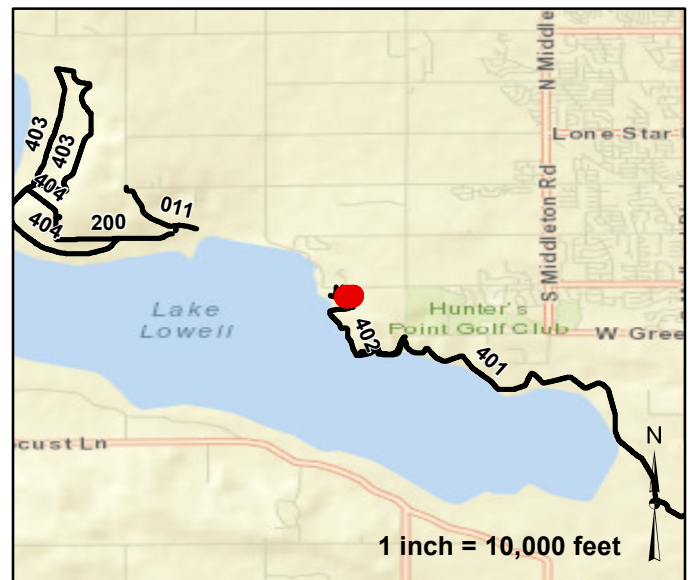
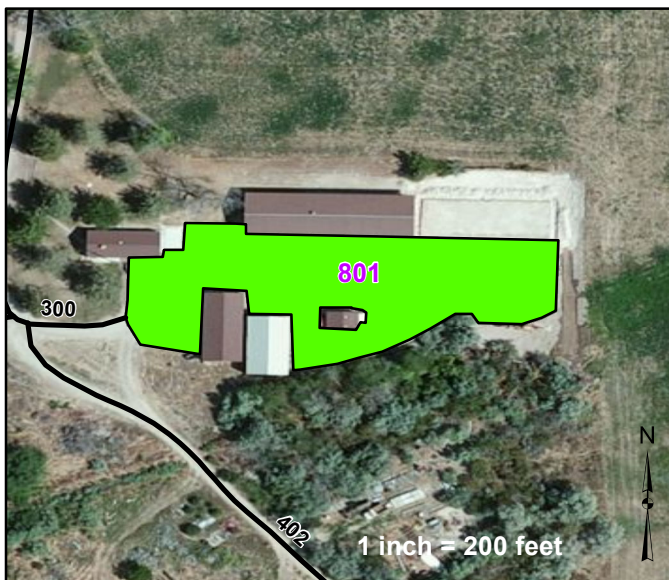


# Route Number: 801

## Shop Parking

From Shop Access Road (Route 300)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10053584	31297	12	Good	Gravel	\$4,800	03-12-2013	\$158,000

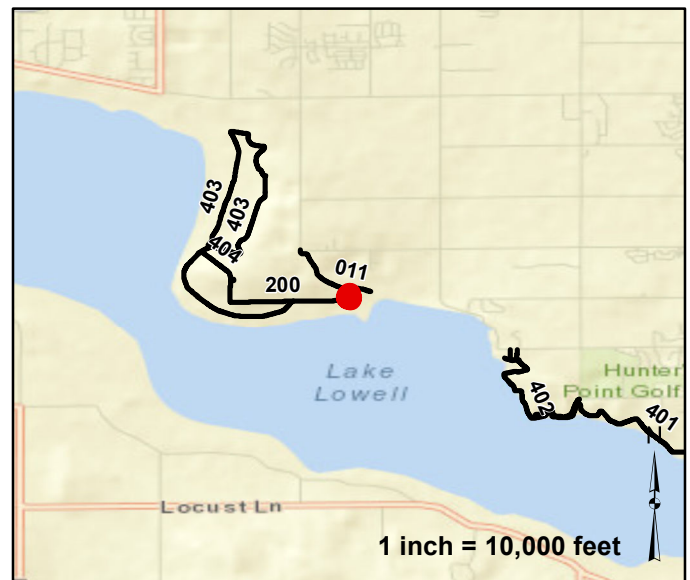


Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads			Guardrail		Other		Good
			Fee Station		Problem Area		Fair
	Begin Section				Culvert		Poor
					Low_Water_Crossing		Failed
					Water_Control_Structure		



**Route Number: 900**  
**Visitor Center Parking**  
**From Entrance Road (Route 010)**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10042373	23774	43	Excellent	Asphalt	\$0	03-12-2013	\$220,000



Parking		Features				Condition:	
Other FWS roads							

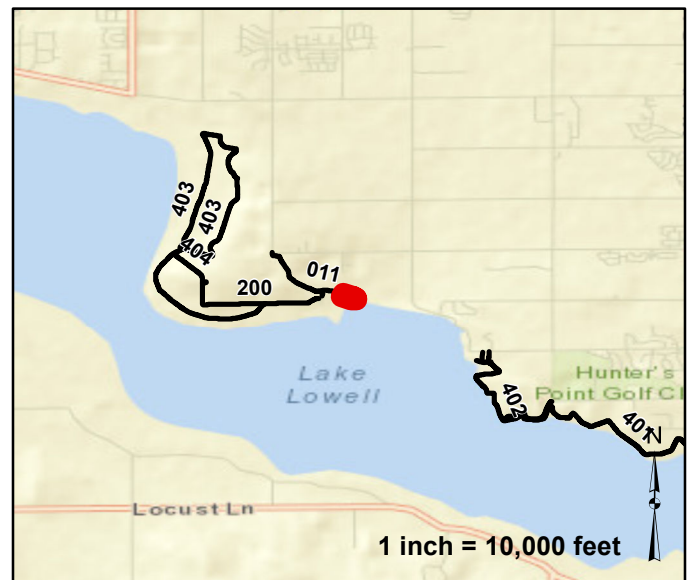
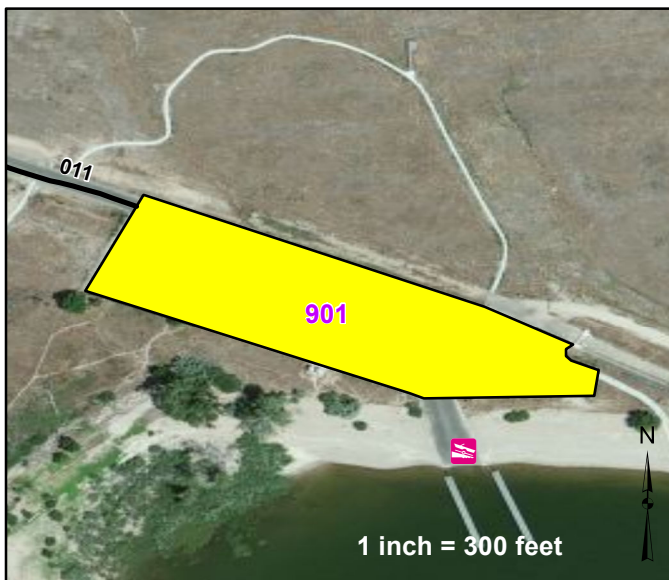


# Route Number: 901

## Upper Dam West Parking

From Upper Embankment Road (Route 011)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10042374	84804	76	Fair	Asphalt	\$74,000	03-12-2013	\$784,600

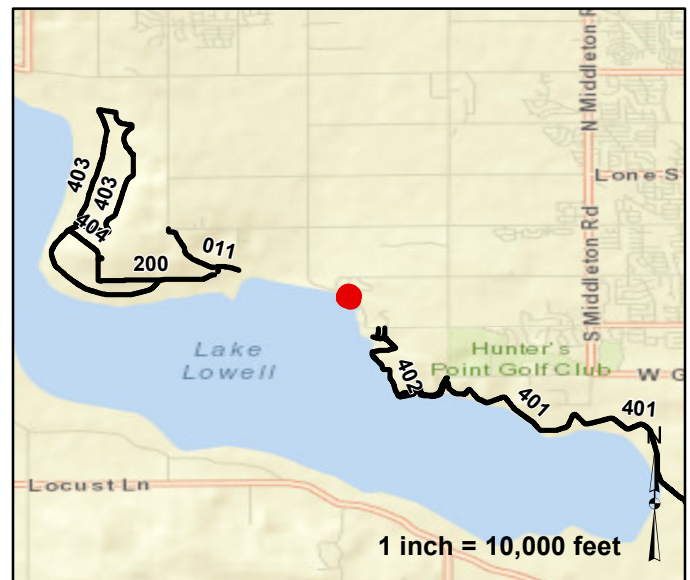
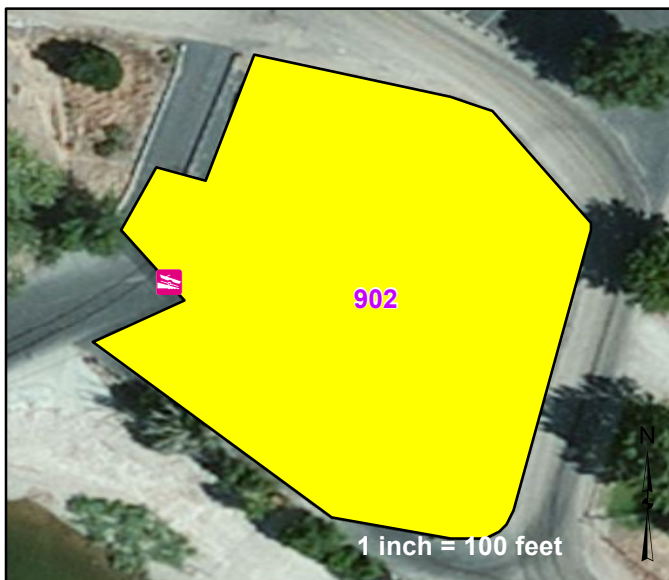


Parking		Features		Condition:	
	Gate		Visitor Center		Excellent
Other FWS roads	Admin Bldg		Other		Good
	Begin Section		Problem Area		Fair
			Culvert		Poor
			Low_Water_Crossing		Failed
			Water_Control_Structure		



**Route Number: 902**  
**Upper Dam East Parking**  
**From Lake Avenue**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10042375	31077	35	Fair	Asphalt	\$27,100	03-12-2013	\$287,500

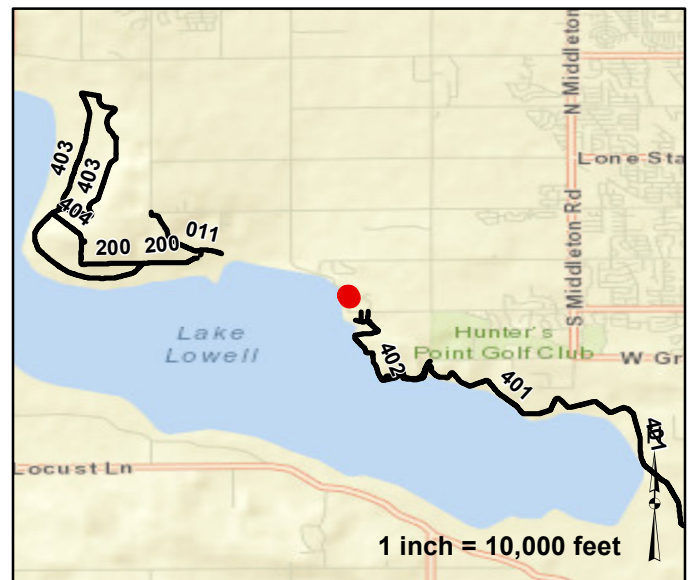


Parking		Features		Condition:	
	Gate		Visitor Center		Excellent
Other FWS roads	Admin Bldg	Guardrail	Other		Good
	Begin Section	Fee Station	Problem Area		Fair
			Culvert		Poor
			Low_Water_Crossing		Failed
			Water_Control_Structure		



**Route Number: 903**  
**Iowa Ave Parking #1**  
**From Iowa Avenue**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10042376	4445	13	Excellent	Asphalt	\$0	03-12-2013	\$41,100



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads	Admin Bldg	Guardrail	Other	Culvert	Low_Water_Crossing		Good
	Begin Section	Fee Station	Problem Area	Water_Control_Structure			Fair
							Poor
							Failed



**Route Number: 904**  
**Iowa Ave Parking #2**  
 From Iowa Avenue

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10042377	3219	9	Good	Asphalt	\$600	03-12-2013	\$29,800



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads	Admin Bldg	Guardrail	Other	Culvert	Low_Water_Crossing		Good
	Begin Section	Fee Station	Problem Area	Water_Control_Structure			Fair
							Poor
							Failed

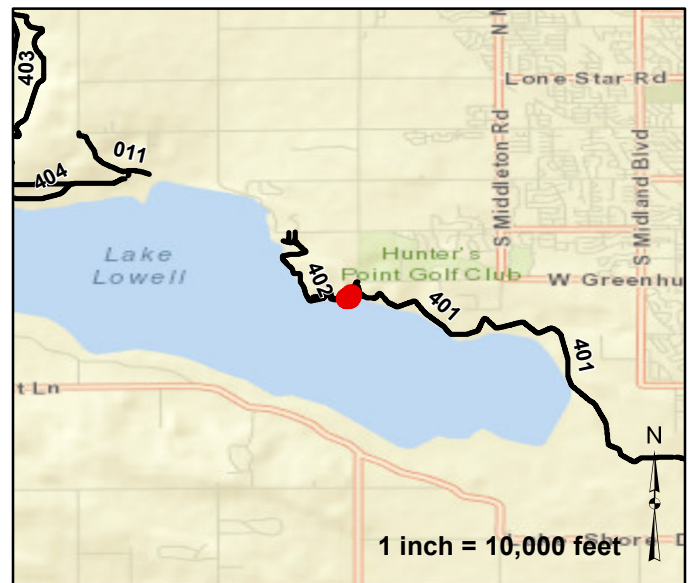
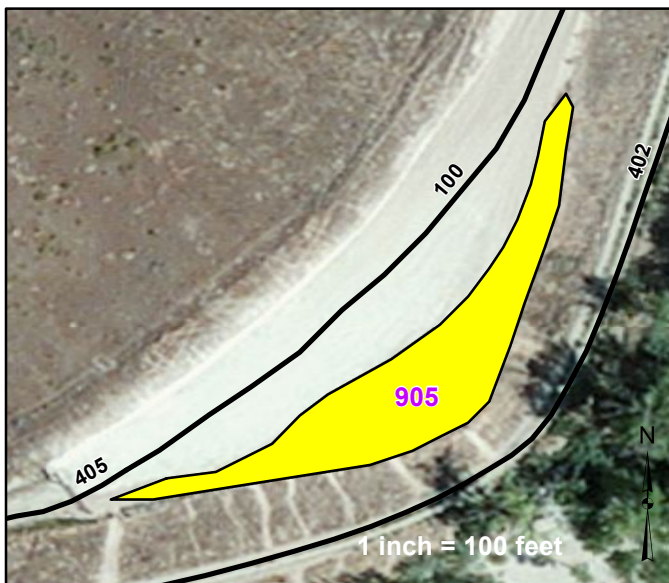


# Route Number: 905

## Gott's Point Parking #1

From Gott's Point Road (Route 100)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10042378	6249	20	Fair	Gravel	\$1,700	03-12-2013	\$31,600



900

Other FWS roads

Gate

Admin Bldg

Begin Section

Boat Ramp

Guardrail

Fee Station

Visitor Center

Other

Problem Area

Culvert

Low\_Water\_Crossing

Water\_Control\_Structure

Excellent

Good

Fair

Poor

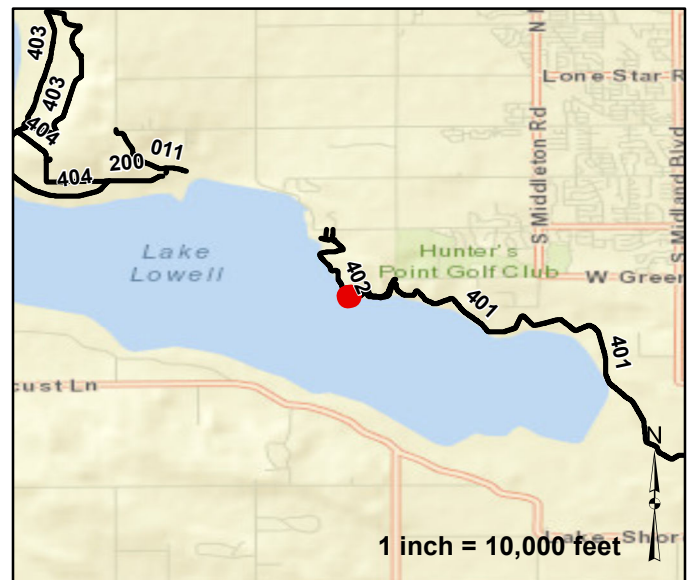
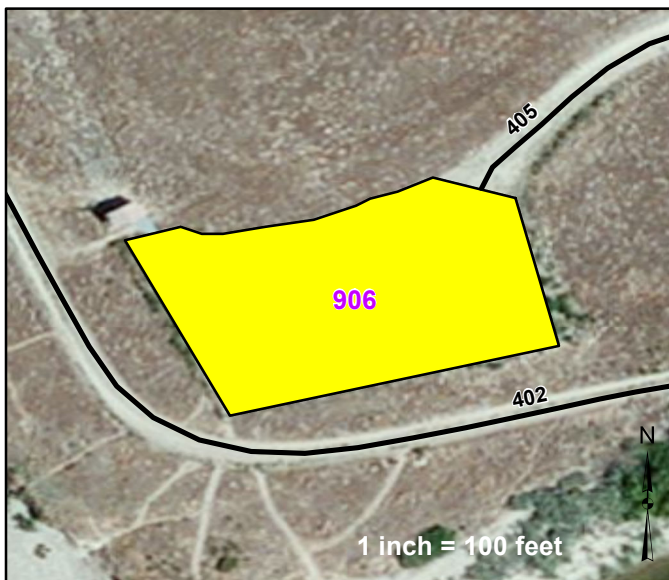
Failed



## Route Number: 906 Gott's Point Parking #2

From Gott's Point Service Road (Route 405)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10042379	12857	14	Fair	Gravel	\$3,500	05-17-2004	\$64,900



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads		Admin Bldg		Guardrail		Other	Good
		Begin Section		Fee Station		Problem Area	Fair
						Culvert	Poor
						Low_Water_Crossing	Failed
						Water_Control_Structure	

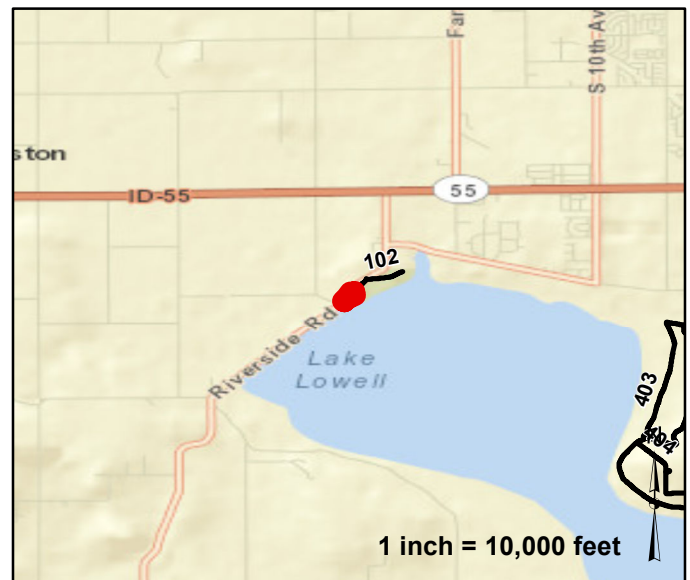
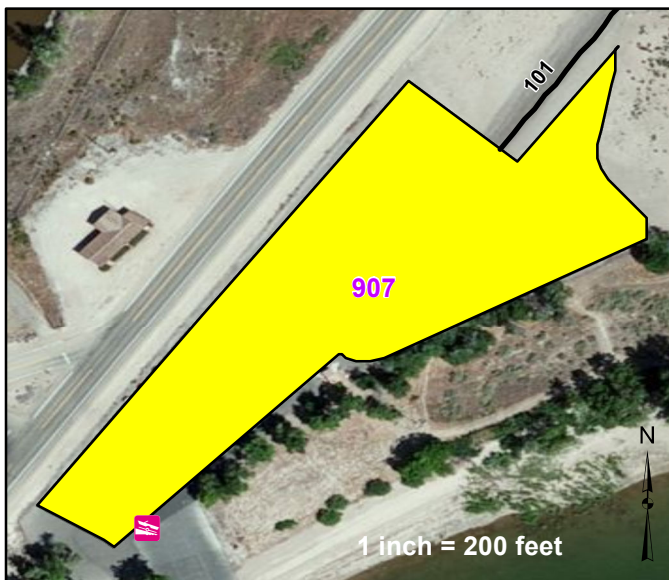


# Route Number: 907

## Lower Dam Boat Ramp Parking

From Lower Dam Boat Ramp Access Road (Route 101)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005337	75936	52	Fair	Asphalt	\$66,300	03-12-2013	\$702,600



Parking		Features		Condition:	
	Gate		Visitor Center		Excellent
Other FWS roads	Admin Bldg	Guardrail	Other		Good
	Begin Section	Fee Station	Problem Area		Fair
			Culvert		Poor
			Low_Water_Crossing		Failed
			Water_Control_Structure		

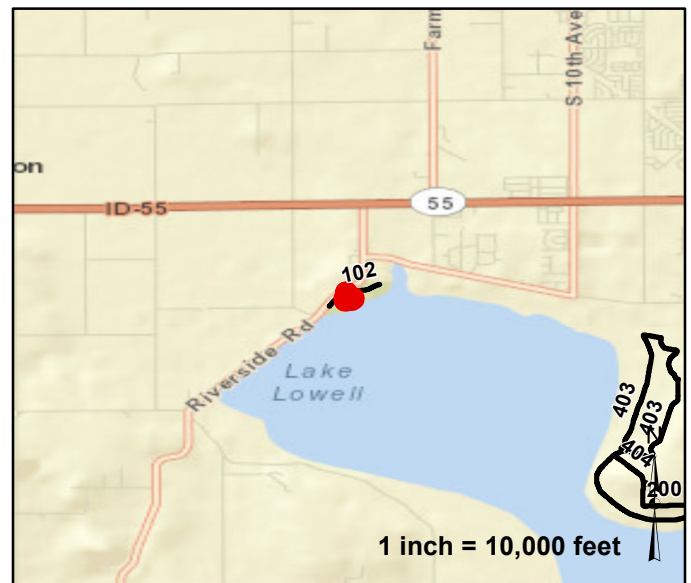
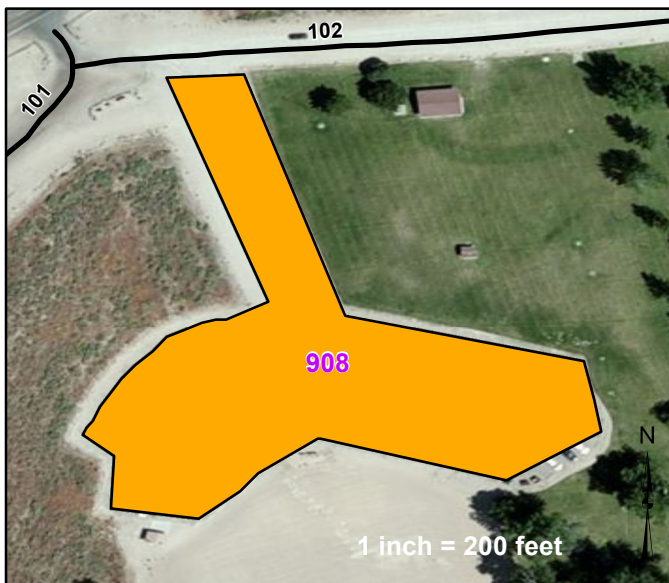


# Route Number: 908

## Lower Dam Beach Parking

From Lower Dam Youth Camp Access Road (Route 102)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005338	67454	134	Poor	Asphalt	\$329,600	03-12-2013	\$624,100



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads		Admin Bldg		Guardrail		Other	Good
		Begin Section		Fee Station		Problem Area	Fair
						Culvert	Poor
						Low_Water_Crossing	Failed
						Water_Control_Structure	

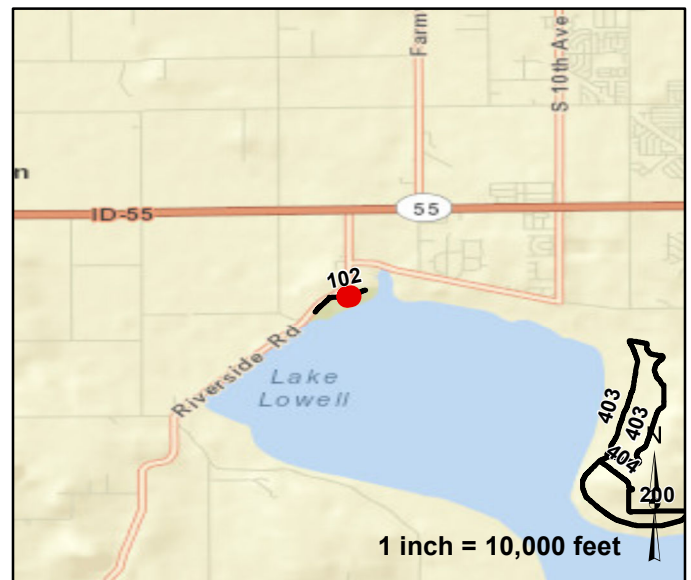
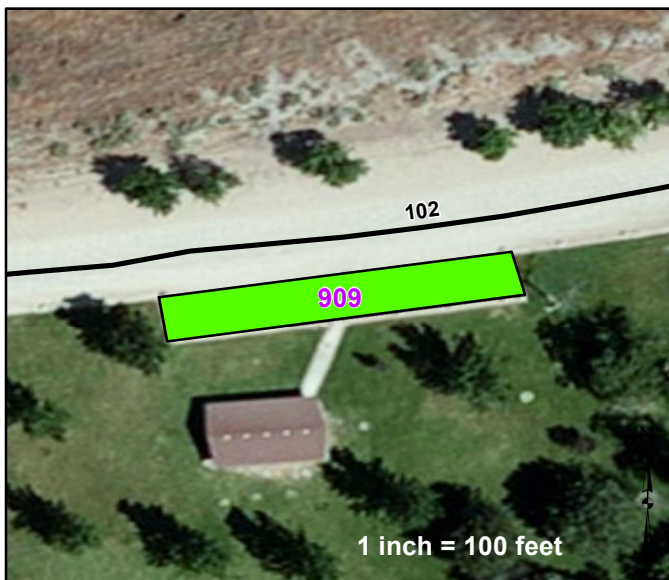


# Route Number: 909

## Lower Dam Picnic Area Parking

From Lower Dam Youth Camp Access Road (Route 102)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10042380	3143	15	Good	Gravel	\$500	03-12-2013	\$15,900



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads		Admin Bldg		Guardrail		Other	Good
	Begin Section		Fee Station		Problem Area		Fair
					Culvert		Poor
					Low_Water_Crossing		Failed
					Water_Control_Structure		

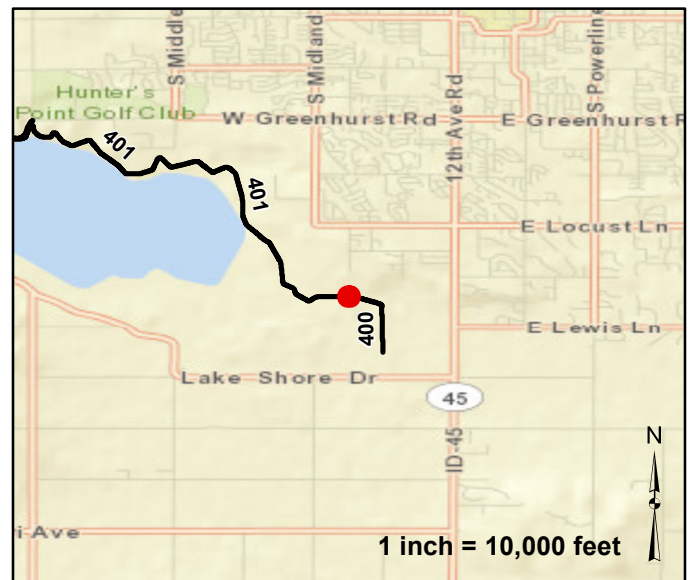


## Route Number: 910

### Tio Lane Parking

From Tio Lane

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10050909	8150	15	Excellent	Asphalt	\$0	03-12-2013	\$75,400

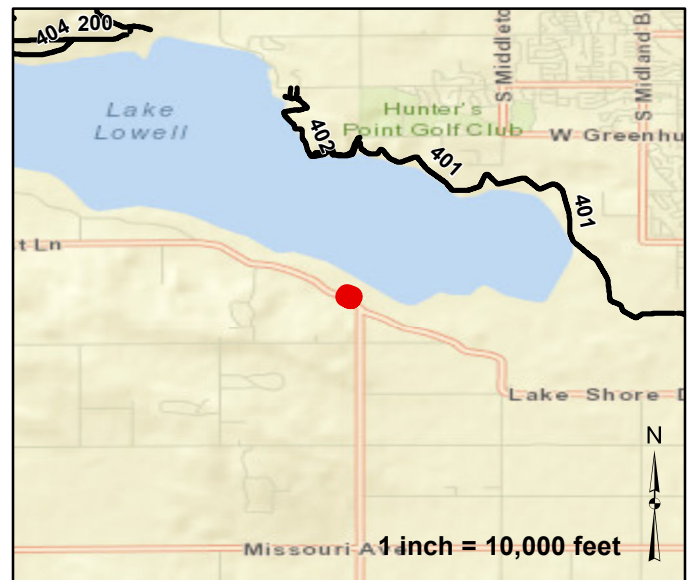


Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads		Admin Bldg		Guardrail		Other	Good
		Begin Section		Fee Station		Problem Area	Fair
						Culvert	Poor
						Low_Water_Crossing	Failed
						Water_Control_Structure	



**Route Number: 911**  
**Lake Shore Drive Parking #1**  
**From Lake Shore Drive**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005336	23071	40	Good	Asphalt	\$4,400	03-12-2013	\$213,500

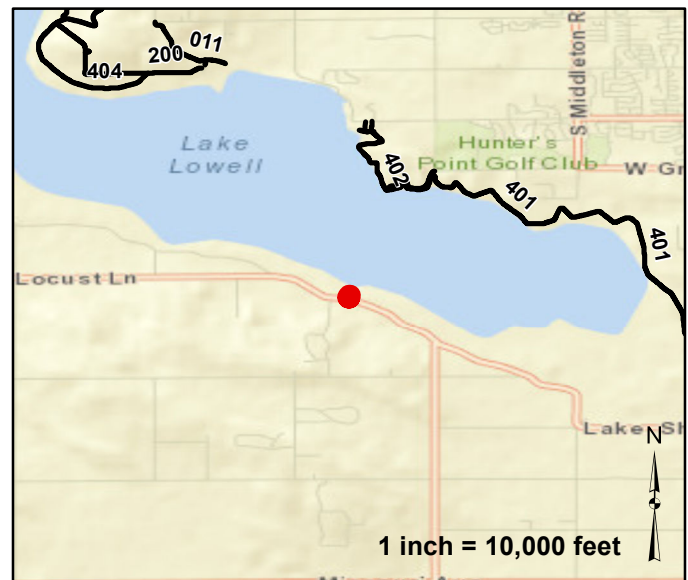


Parking		Features				Condition:	
	Gate	Boat Ramp	Visitor Center	Culvert		Excellent	
Other FWS roads	Admin Bldg	Guardrail	Other	Low_Water_Crossing		Good	
	Begin Section	Fee Station	Problem Area	Water_Control_Structure		Fair	
						Poor	
						Failed	



**Route Number: 912**  
**Lake Shore Drive Parking #2**  
**From Lake Shore Drive**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005336	8383	15	Excellent	Asphalt	\$0	03-12-2013	\$77,600

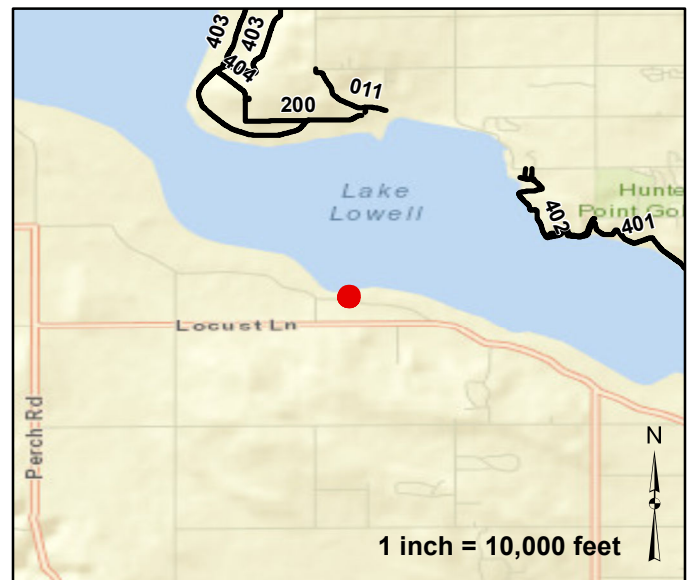


Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
	Other FWS roads		Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed



**Route Number: 913**  
**Lake Shore Drive Parking #3**  
**From Lake Shore Drive**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005336	9069	20	Excellent	Asphalt	\$0	03-12-2013	\$83,900

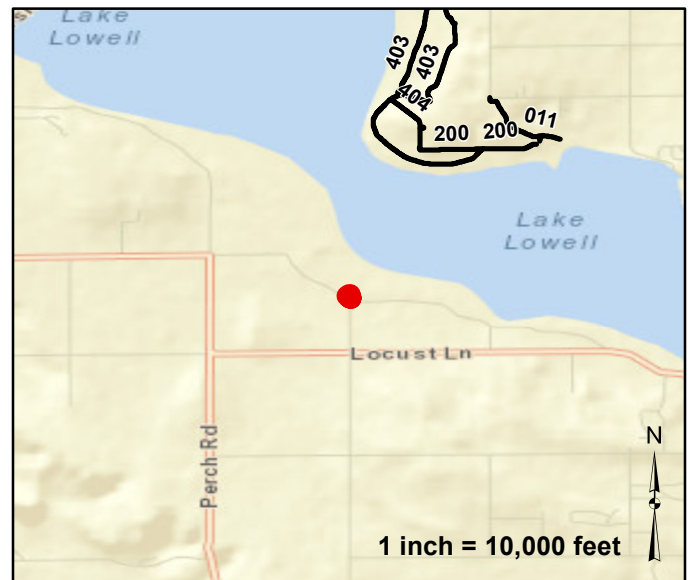


Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
	Other FWS roads		Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed



**Route Number: 914**  
**Lake Shore Drive Parking #4**  
**From Lake Shore Drive**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005336	15523	15	Excellent	Asphalt	\$0	03-12-2013	\$143,600

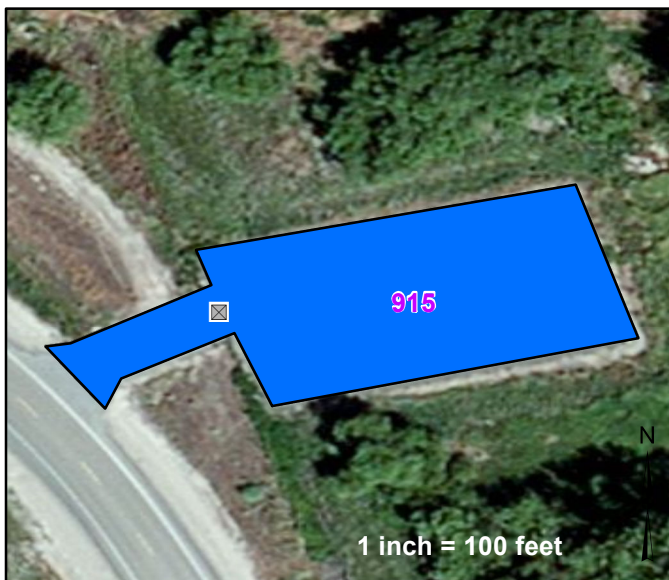


Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
	Other FWS roads		Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed



**Route Number: 915**  
**Lake Shore Drive Parking #5**  
**From Lake Shore Drive**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005336	14130	25	Excellent	Asphalt	\$0	03-12-2013	\$130,700

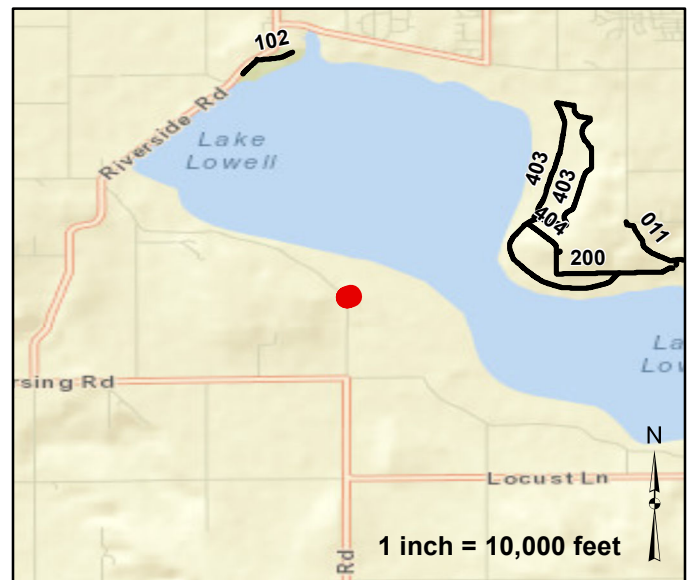
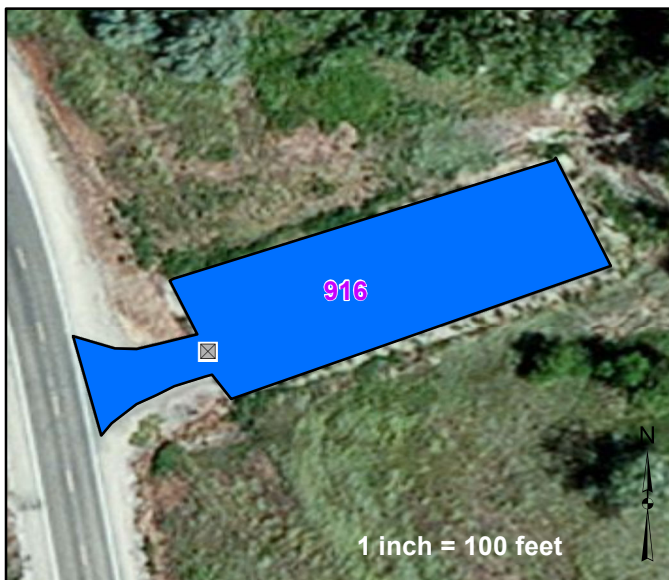


Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
	Other FWS roads		Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed



**Route Number: 916**  
**Lake Shore Drive Parking #6**  
**From Lake Shore Drive**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005336	11384	30	Excellent	Asphalt	\$0	05-17-2004	\$105,300

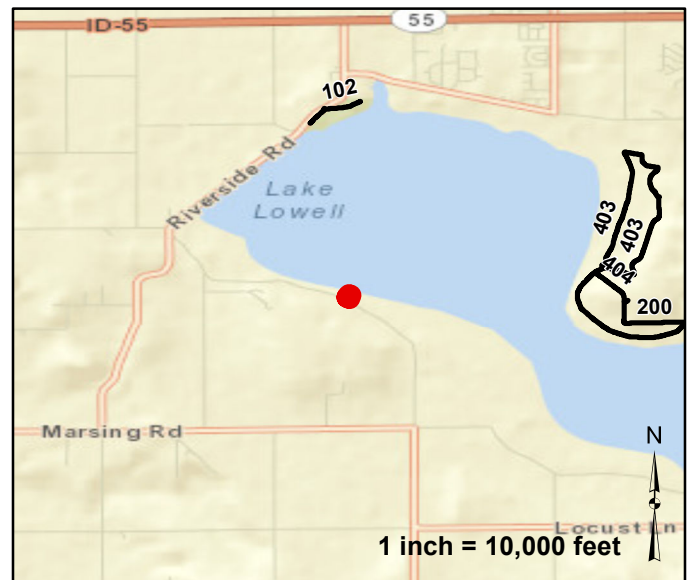


Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
	Other FWS roads		Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed



**Route Number: 917**  
**Lake Shore Drive Parking #7**  
**From Lake Shore Drive**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10005336	11898	25	Fair	Asphalt	\$10,400	03-12-2013	\$110,100



Parking		Features				Condition:	
		Gate	Boat Ramp	Visitor Center	Culvert		Excellent
Other FWS roads	Admin Bldg	Guardrail	Other	Problem Area	Low_Water_Crossing		Good
	Begin Section	Fee Station		Water_Control_Structure			Fair
							Poor
							Failed

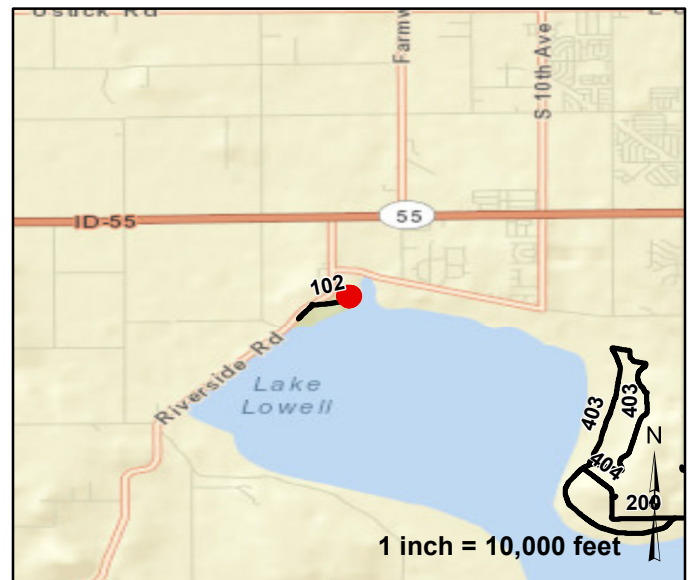
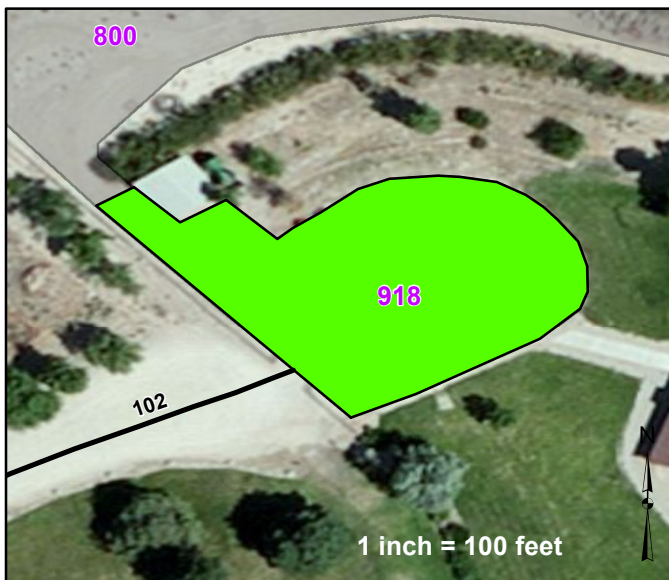


# Route Number: 918

## Environmental Education Parking

From Lower Dam Youth Camp Access Road (Route 102)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	13235	24	Good	Gravel	\$2,000	03-12-2013	\$66,800

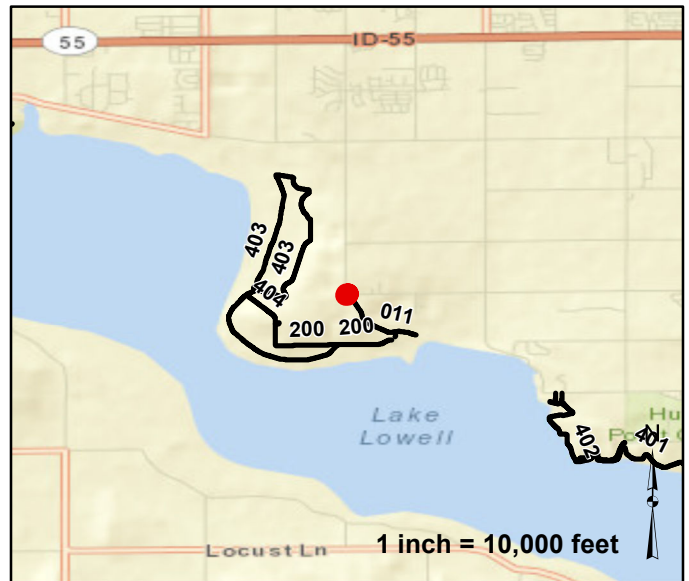


Parking		Features		Condition:	
	Other FWS roads	Gate	Boat Ramp	Visitor Center	Excellent
Admin Bldg	Begin Section	Guardrail	Fee Station	Other	Good
		Problem Area	Culvert	Low_Water_Crossing	Fair
			Water_Control_Structure	Poor	Failed



**Route Number: 919**  
**Upper Entrance Parking**  
**From Upper Embankment Road (Route 011)**

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	6348	20	Excellent	Asphalt	\$0	03-12-2013	\$58,700



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
	Other FWS roads		Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed



Deer Flat NWR Bridge Inventory					
Rte #	Milepost	NBIS #	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
No Bridges to Report					



## ROUTE: 010

## Features Photographs



Photo: DEFL\_C4\_0130 Route: 010-001-0.0  
Begin Section



Photo: DEFL\_C4\_0131 Route: 010-001-0.0  
Metal Open Rail Gate



Photo: DEFL\_C4\_0132 Route: 010-001-0.03  
Metal Culvert 55ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0133 Route: 010-001-0.03  
Metal Culvert 55ft long 24in dia. 2ft deep



## ROUTE: 011

## Features Photographs



Photo: DEFL\_C4\_0112 Route: 011-001-0.0  
Begin Section



Photo: DEFL\_C4\_0113 Route: 011-001-0.01  
PVC Open Rail Gate electric



Photo: DEFL\_C4\_0114 Route: 011-001-0.23  
Metal Culvert 60ft long 18in dia. 2ft deep



Photo: DEFL\_C4\_0115 Route: 011-001-0.23  
Metal Culvert 60ft long 18in dia. 2ft deep



Photo: DEFL\_C4\_0116 Route: 011-001-0.31  
Metal Culvert 50ft long 24in dia. 1ft deep



Photo: DEFL\_C4\_0117 Route: 011-001-0.31  
Metal Culvert 50ft long 24in dia. 1ft deep



## ROUTE: 011

## Features Photographs



Photo: DEFL\_C4\_0118 Route: 011-001-0.42  
Metal Culvert 50ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0119 Route: 011-001-0.42  
Metal Culvert 50ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0120 Route: 011-001-0.51  
Metal Culvert 55ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0121 Route: 011-001-0.51  
Metal Culvert 55ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0122 Route: 011-001-0.59  
Metal Culvert 55ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0123 Route: 011-001-0.59  
Metal Culvert 55ft long 24in dia. 2ft deep



## ROUTE: 011

## Features Photographs



Photo: DEFL\_C4\_0124 Route: 011-001-0.61  
Metal Culvert 55ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0125 Route: 011-001-0.61  
Metal Culvert 55ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0126 Route: 011-001-0.7  
Metal Culvert 55ft long 24in dia. 2ft deep



Photo: DEFL\_C4\_0127 Route: 011-001-0.7  
Metal Culvert 55ft long 24in dia. 2ft deep



## ROUTE: 100

## Features Photographs



Photo: DEFL\_C4\_0087 Route: 100-001-0.0  
Begin Section



Photo: DEFL\_C4\_0088 Route: 100-001-0.0  
Metal Open Rail Gate



## ROUTE: 101

## Features Photographs



Photo: DEFL\_C4\_0004 Route: 101-001-0.0  
Begin Section



Photo: DEFL\_C4\_0005 Route: 101-001-0.0  
Metal Open Rail Gate electric



## ROUTE: 102

## Features Photographs



Photo: DEFL\_C4\_0008 Route: 102-001-0.0  
Begin Section



Photo: DEFL\_C4\_0009 Route: 102-001-0.28  
Metal Open Rail Gate



## ROUTE: 200

## Features Photographs



Photo: DEFL\_C4\_0002 Route: 200-001-0.0  
Begin Section



Photo: DEFL\_C4\_0136 Route: 200-002-0.39  
Begin Section



## ROUTE: 300

## Features Photographs



Photo: DEFL\_C4\_0097 Route: 300-001-0.0  
Begin Section



Photo: DEFL\_C4\_0098 Route: 300-001-0.0  
Metal Open Rail Gate



Photo: DEFL\_C4\_0096 Route: 300-002-0.1  
Begin Section



Photo: DEFL\_C4\_0101 Route: 300-003-0.14  
Begin Section



Photo: DEFL\_C4\_0102 Route: 300-003-0.17  
Metal Open Rail Gate



Photo: DEFL\_C4\_0103 Route: 300-003-0.25  
Metal Open Rail Gate



## ROUTE: 400

## Features Photographs



Photo: DEFL\_C4\_0050 Route: 400-001-0.0  
Begin Section



Photo: DEFL\_C4\_0051 Route: 400-001-0.0  
Metal Open Rail Gate



Photo: DEFL\_C4\_0052 Route: 400-001-0.4  
Plastic WCS Screw Gate 40ft long 18in dia. 5ft deep



Photo: DEFL\_C4\_0053 Route: 400-001-0.4  
Plastic WCS Screw Gate 40ft long 18in dia. 5ft deep



## ROUTE: 401

## Features Photographs



Photo: DEFL\_C4\_0054 Route: 401-001-0.0  
Begin Section



Photo: DEFL\_C4\_0055 Route: 401-001-0.0  
Metal Open Rail Gate



Photo: DEFL\_C4\_0056 Route: 401-001-0.69  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0057 Route: 401-001-0.69  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0058 Route: 401-001-0.8  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0059 Route: 401-001-0.8  
Metal Culvert 30ft long 18in dia. 3ft deep



## ROUTE: 401

## Features Photographs



Photo: DEFL\_C4\_0060 Route: 401-001-0.9  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0061 Route: 401-001-0.9  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0062 Route: 401-002-0.95  
Begin Section



Photo: DEFL\_C4\_0063 Route: 401-002-1.02  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0064 Route: 401-002-1.02  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0065 Route: 401-002-1.22  
Metal Culvert 30ft long 18in dia. 3ft deep



## ROUTE: 401

## Features Photographs



Photo: DEFL\_C4\_0066 Route: 401-002-1.22  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0067 Route: 401-002-1.32  
Metal Culvert 30ft long 18in dia. 2ft deep



Photo: DEFL\_C4\_0068 Route: 401-002-1.32  
Metal Culvert 30ft long 18in dia. 2ft deep



Photo: DEFL\_C4\_0069 Route: 401-002-1.53  
Metal Culvert 30ft long 18in dia. 2ft deep



Photo: DEFL\_C4\_0070 Route: 401-002-1.53  
Metal Culvert 30ft long 18in dia. 2ft deep



Photo: DEFL\_C4\_0071 Route: 401-003-1.95  
Begin Section



## ROUTE: 401

## Features Photographs



Photo: DEFL\_C4\_0072 Route: 401-003-2.11  
Metal WCS Drop Pipe 40ft long 18in dia. 4ft deep



Photo: DEFL\_C4\_0073 Route: 401-003-2.11  
Metal WCS Drop Pipe 40ft long 18in dia. 4ft deep



Photo: DEFL\_C4\_0074 Route: 401-003-2.38  
Metal Culvert 30ft long 18in dia. 1ft deep



Photo: DEFL\_C4\_0075 Route: 401-003-2.38  
Metal Culvert 30ft long 18in dia. 1ft deep



Photo: DEFL\_C4\_0076 Route: 401-004-2.95  
Begin Section



Photo: DEFL\_C4\_0077 Route: 401-004-3.14  
Metal Culvert 30ft long 18in dia. 2ft deep



## ROUTE: 401

## Features Photographs



Photo: DEFL\_C4\_0078 Route: 401-004-3.14  
Metal Culvert 30ft long 18in dia. 2ft deep



Photo: DEFL\_C4\_0079 Route: 401-004-3.49  
Metal Culvert 30ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0080 Route: 401-004-3.49  
Metal Culvert 30ft long 18in dia. 3ft deep



## ROUTE: 402

## Features Photographs



Photo: DEFL\_C4\_0081 Route: 402-001-0.0  
Begin Section



Photo: DEFL\_C4\_0082 Route: 402-001-0.01  
Metal Open Rail Gate



Photo: DEFL\_C4\_0083 Route: 402-001-0.73  
Metal Open Rail Gate



Photo: DEFL\_C4\_0084 Route: 402-002-0.97  
Begin Section



Photo: DEFL\_C4\_0085 Route: 402-002-1.31  
Metal Culvert 20ft long 18in dia. 3ft deep



Photo: DEFL\_C4\_0086 Route: 402-002-1.31  
Metal Culvert 20ft long 18in dia. 3ft deep



## ROUTE: 403

## Features Photographs



Photo: DEFL\_C4\_0137 Route: 403-001-0.0  
Begin Section



Photo: DEFL\_C4\_0138 Route: 403-002-0.97  
Begin Section



Photo: DEFL\_C4\_0139 Route: 403-002-1.14  
Metal Open Rail Gate



Photo: DEFL\_C4\_0140 Route: 403-003-1.13  
Begin Section



Photo: DEFL\_C4\_0141 Route: 403-003-1.18  
Metal Culvert 20ft long 12in dia. 1ft deep



Photo: DEFL\_C4\_0142 Route: 403-003-1.18  
Metal Culvert 20ft long 12in dia. 1ft deep



## ROUTE: 403

## Features Photographs



Photo: DEFL\_C4\_0143 Route: 403-003-1.82  
Metal Culvert 12ft long 12in dia. 1ft deep



Photo: DEFL\_C4\_0144 Route: 403-003-1.82  
Metal Culvert 12ft long 12in dia. 1ft deep



Photo: DEFL\_C4\_0145 Route: 403-003-2.01  
Metal Culvert 20ft long 12in dia. 1ft deep



Photo: DEFL\_C4\_0146 Route: 403-003-2.01  
Metal Culvert 20ft long 12in dia. 1ft deep



Photo: DEFL\_C4\_0147 Route: 403-004-2.1  
Begin Section



Photo: DEFL\_C4\_0148 Route: 403-004-2.28  
Concrete Culvert 20ft long 16in dia. 1ft deep



## ROUTE: 403

## Features Photographs



Photo: DEFL\_C4\_0149 Route: 403-004-2.28  
Concrete Culvert 20ft long 16in dia. 1ft deep



## ROUTE: 404

## Features Photographs



Photo: DEFL\_C4\_0150 Route: 404-001-0.0  
Begin Section



Photo: DEFL\_C4\_0151 Route: 404-002-0.77  
Begin Section



## ROUTE: 405

## Features Photographs



Photo: DEFL\_C4\_0091 Route: 405-001-0.0  
Begin Section



Photo: DEFL\_C4\_0092 Route: 405-001-0.0  
Metal Open Rail Gate



Photo: DEFL\_C4\_0095 Route: 405-001-0.01  
Cable Guardrail Cable 1584.0 ft long



## ROUTE: 600

## Features Photographs



Photo: DEFL\_C4\_0045 Route: 600-001-0.0  
Obstacle Location of Carter's Corner East Road.  
Asset# 100435311. Too overgrown to drive



Photo: DEFL\_C4\_0046 Route: 600-001-0.0  
Metal Open Rail Gate



## ROUTE: 910

## Features Photographs



Photo: DEFL\_C4\_0049 Route: 910  
Metal Open Rail Gate



## ROUTE: 911

## Features Photographs



Photo: DEFL\_C4\_0042 Route: 911  
Metal Open Rail Gate



Photo: DEFL\_C4\_0043 Route: 911  
Metal Cable Gate



## ROUTE: 912

## Features Photographs



Photo: DEFL\_C4\_0039 Route: 912  
Metal Open Rail Gate



## ROUTE: 913

## Features Photographs



Photo: DEFL\_C4\_0036 Route: 913  
Metal Open Rail Gate



## ROUTE: 914

## Features Photographs



Photo: DEFL\_C4\_0033 Route: 914  
Metal Open Rail Gate



## ROUTE: 915

## Features Photographs



Photo: DEFL\_C4\_0030 Route: 915  
Metal Open Rail Gate



## ROUTE: 916

## Features Photographs



Photo: DEFL\_C4\_0027 Route: 916  
Metal Open Rail Gate



## ROUTE: 917

## Features Photographs



Photo: DEFL\_C4\_0021 Route: 917  
Metal Open Rail Gate



Photo: DEFL\_C4\_0024 Route: 917  
Metal Open Rail Gate



### Accident Summary

Number of Accidents Reported	Timespan of Accidents	Injuries	Fatalities
0	No Accidents to Report	0	0



## APPENDIX

<b>TABLE 1 - GENERAL FWS ROAD FUNCTIONAL CLASSIFICATION</b>	
<b>Class I</b>	Principal Refuge Road (Public Roads) - Routes that constitute the main access route, main auto tour route, or thoroughfare for refuge visitors. These routes are accessible by 2WD vehicles. Routes are numbered from 10 to 99.
<b>Class II</b>	Connector Refuge Road (Public Roads) - Routes that provide circulation within the refuge. These routes can also provide access to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, education centers, etc. These routes are accessible by 2WD vehicles. Routes are numbered from 100 to 199.
<b>Class III</b>	Special Purpose Refuge Road (Public Roads) - Roads that provide circulation within special use areas such as campgrounds or public concessionaire facilities or access to remote areas of the refuge. These routes may not be 2WD accessible. Routes are numbered from 200 to 299
<b>Class IV</b>	Administrative Access Road (Administrative Roads) - Routes intended for access to administrative developments or structures such as maintenance offices, employee quarters, or utility areas. These routes are accessible by 2WD vehicles. These routes may restrict access to the general public. Routes are numbered from 300 to 399.
<b>Class V</b>	Restricted Road (Administrative Roads) - Routes normally closed to the public, such as maintenance roads, service roads, patrol roads, and fire breaks. These routes may be open to the public for a short period of time for a special use, such as hunting access. These routes may not be 2WD accessible. Routes are numbered from 400 to 499.

A refuge road system contains those routes within or giving access to a refuge or other unit of the FWS that are administered by the FWS, or by the Service in cooperation with other agencies. The assignment of a functional classification (FC) to a refuge road is not based on traffic volumes or design speed, but on the intended use or function of that route



## DESCRIPTION OF RATING SYSTEM

Rating Data is collected on four different surface types: Asphalt, Concrete, Gravel, and Native. The Utah LTAP Center's Remaining Service Life (RSL) system is used for all surface types. The RSL system is based on the Strategic Highway Research Program's (SHRP) Distress Identification Manual.

### Asphalt Rating System

Data is collected on the following distresses and conditions:

- **Fatigue Cracking** - Interconnected cracks forming small irregular shapes.
- **Longitudinal Cracking** - Cracks running parallel with the roadway, in the direction of traffic.
- **Transverse Cracking** - Cracks perpendicular to the roadway, going across the lane or lanes.
- **Block Cracking** - Interconnected cracks forming large blocks.
- **Edge Cracking** - Cracks running along the edge of the pavement surface.
- **Patches** - Original surface repaired with new asphalt patch material.
- **Potholes** - Holes or depressions in the pavement.
- **Rutting** - surface depressions in the wheel paths.
- **Roughness** - Evenness of pavement for serviceability.
- **Drainage** - Ability of the road surface to drain water based on proper slope.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

### Rating Index Formula

Fatigue, longitudinal, transverse, block, and edge cracking, along with patching and potholes are rated on a 0 - 9 scale (0 = no distress, 9 = maximum distress). The rating given is based on the extent and the severity of the distress. Rutting, roughness, and drainage are rated on a 0 - 3 scale (0 = excellent, 3 = poor). Each distress type has given Remaining Service Life (RSL) values (in years) based on the rating for that particular distress. The distress with the rating resulting in the lowest RSL value is considered to be the governing distress. That value is then assigned as the RSL of the road segment.

### Concrete Rating System

Data is collected on the following distresses and conditions:

- **Spalling of Joints** - Chipping, breaking, or cracking of slab edges
- **Joint Seal Damage** - Any damage or condition that enables materials or water to infiltrate into the joint from the surface.
- **Corner Breaks** - A portion of the slab separated by a crack that intersects the adjacent transverse and longitudinal joints, forming approximately a 45° angle to the direction.
- **Broken Slabs** - Faulting and/or cracking localized to individual slabs.



- **Faulting** – Difference in elevation across a crack or joint.
- **Longitudinal Cracking** – Cracks in the pavement running parallel to road.
- **Transverse Cracking** - Cracks in the pavement running perpendicular to the direction of traffic.
- **Patch Deterioration** – Faulting, settling, or cracking of previously placed patch
- **Map Cracking** – A series of cracks that extend only into the upper surface of the Slab

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

### **Rating Index Formula**

The rating procedure for concrete pavement is the same as that for asphalt pavement described previously. Each of the distresses described above are rated on the same 0 – 9 scale. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

### **Gravel and Native Rating System**

Data is collected on the following distresses and conditions:

- **Cross Section (Crown)** - Roadway built so that the center is higher than the shoulder, to prevent water from pooling on roadway.
- **Roadside Drainage** - Roadside ditches and culverts to handle water flow and prevent pooling on the roadside.
- **Corrugations (Washboarding)** - Small trenches or holes developing perpendicular to the roadway.
- **Potholes** - Holes or depressions in the roadway.
- **Rutting** - Depressions running parallel with the roadway, in the wheelpaths.
- **Dust** - Amount of dust caused by traffic.
- **Loose Aggregate (Gravel Only)** - Loose gravel, typically piled up on the roadway edges or centerline.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

### **Rating Index Formula**

The rating procedure for unpaved roads is the same as that for asphalt and concrete pavements described previously. Of the distresses described above, corrugations, potholes, rutting, and loose aggregate are rated on the same 0 – 9 scale previously mentioned. Cross section, roadside drainage, and dust are rated on the same 0 – 3 scale described for asphalt pavement. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.



## Condition Descriptions by Surface Type

The following definitions are used to describe pavement condition for the various surface types. These are general guidelines for condition indications.

### Asphalt

**Excellent** – Recently constructed or overlaid road where construction or overlay was performed correctly- No maintenance required. RSL = 19-20 years.

**Good** – Low extent longitudinal and transverse cracks. All cracks are 1/4" or less with little or no crack erosion. Patches are in good condition and applied correctly. Routine Maintenance recommended. RSL = 13-18 years.

**Fair** - Roads are in good structural condition with little or no fatigue cracking. Longitudinal, transverse, and edge cracking is at medium extent and severity. Block cracking is not extensive. Any patches are in good condition. Preventative maintenance recommended. RSL = 7-12 years.

**Poor** - Road beginning to show signs of structural distress. Fatigue cracking is medium to high extent and medium severity. Cracking will be severe. Surface may have severe block cracking and show. Patches are in fair to poor condition. There is moderate distortion or rutting and occasional potholes. Rehabilitation recommended. RSL = 1-6 years.

**Failed** - Road is severely deteriorated. Signs of structural failure appear along with severe and extensive fatigue cracking, distortion, potholes, or extensive patches in poor condition. Reconstruction recommended. RSL = 0 years.

### Concrete

**Excellent** - New pavement. No maintenance required. RSL = 19-20 years

**Good** - First signs of transverse cracking, patch or repair, more extensive pop-outs, or scaling. Sealing or routine maintenance recommended. RSL = 13-18 years.

**Fair** – Pavement has joint or crack spalling, and/or faulting, along with cracking at corners with broken pieces. Any Patches are in fair condition and faulting is at a minimum. Preventative maintenance recommended. RSL = 7-12 years.

**Poor** - Joints and cracks are open 1 inch, spalled, or patched. Faulting is more severe. Rehabilitation recommended. RSL = 1-6 years.

**Failed** - Most slabs have failed structurally, and faulting is severe. Reconstruction recommended. RSL = 0 years.11-9

The following table shows the relationship between RSL and condition.



SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Asphalt and Concrete Pavements)								
	FAILED	POOR		FAIR		GOOD		EXCELLENT
RSL Years	0	1-3	4-6	7-9	10-12	13-15	16-18	19-20

### Gravel and Native

**Note** - Native surfaces do not have a gravel layer.

**Excellent** - Newly constructed road that has been constructed properly with proper crown, drainage and gravel layer. Little or no distress. No maintenance recommended. RSL = 8-10 years.

**Good** - Crown, drainage provisions, and gravel layer are in good condition. Distress limited to traffic effects such as dust, loose aggregate, and low severity corrugations (wash boarding). RSL = 5-7 years.

**Fair** - Adequate drainage and crown through majority of roadway. Crown repair, ditch improvement may be necessary. Road has more severe corrugations and potholes. Preventative maintenance recommended. RSL = 3-4 years.

**Poor** - Travel at slow speeds is necessary. Additional gravel layer needed to carry traffic. Poor crown. Ditching is inadequate and rutting is extensive and severe. Rehabilitation recommended. RSL = 1-2 years.

**Failed** - Travel is difficult, and road may be closed at times. Rutting and Corrugations are very severe. Total Reconstruction of road is recommended. RSL = 0 years.

The following table shows the RSL values for gravel and native roads in terms of excellent, good, fair, poor, and failed condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Gravel and Native Surfaces)					
	FAILED	POOR	FAIR	GOOD	EXCELLENT
RSL Years	0	1-2	3-4	5-7	8-10

# NATIVE PRIMITIVE/IMPROVED RATING SHEET

## Cross Section (Crown)\*

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

## Rutting

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 6"	1	2	3
	Med 6-12"	4	5	6
	High > 12"	7	8	9

## Roadside Drainage\*

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

## Potholes

Severity	Extent (Area)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 6"	1	2	3
	Med 6-12"	4	5	6
	High > 12"	7	8	9

## Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

## Corrugations

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 3"	1	2	3
	Med 3-6"	4	5	6
	High > 6"	7	8	9

\* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.



## GRAVEL RATING SHEET

### Cross Section (Crown)

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

### Rutting

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

### Roadside Drainage

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

### Potholes

Severity	Extent (Area)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

### Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

### Corrugations

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 2"	1	2	3
	Med 2-4"	4	5	6
	High > 4"	7	8	9

\* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.

### Loose Aggregate

Severity	Extent (Area)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

# ASPHALT RATING SHEET

## Fatigue Cracking

Severity	Extent			
	No Defects	Low 1 crack WP	Med 2 cracks WP	High >30% length
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Edge Cracking

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	0-6" from curb	1	2	3
	6-18" from curb	4	5	6
	> 18" from curb	7	8	9

## Longitudinal Cracking

Severity	Extent			
	No Defects	Low 1 crack full length	Med 2 cracks full length	High >2 cracks full length
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Block Cracking

Severity	Extent (Length)			
	No Defects	Low > 15x15' squares	Med 15-10' squares	High <10x10' squares
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Transverse Cracking

Severity	Extent (ft between cracks)			
	No Defects	Low > 200'	Med 200-50'	High < 50'
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Utility Cuts

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Drainage/Roughness/Rutting

Severity	Condition		Description
	No Defects	0	Wide, deep ditches with no obstructions, smooth ride, no rutting, no potholes.
	Minor Defects	1	Drainage may be obstructed, < 1" rutting, minor roughness.
	Moderate Defects	2	Poor drainage, 1-2" rutting, noticeable roughness, potholes < 6" wide.
	Major Defects	3	No drainage; > 2" rutting; potholes 6-12" wide create roughness requiring reduced speeds.



# CONCRETE RATING SHEET

## Spalling of Joints

Extent (% joints)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low Spalls < 3"	1	2	3
	Med Spalls 3-6"	4	5	6
	High Spalls > 6"	7	8	9

## Broken Slabs

Extent (% slabs)				
No Defects	Low <5%	Med 5-15%	High >15%	
Severity	Low-no more than 3 pieces, no spalling/faulting	1	2	3
	Med-broken into >3 pieces, spalling/faulting <1/4"	4	5	6
	High-4 or more pieces, spalling/faulting >1/4"	7	8	9

## Transverse Cracks

Extent (% slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/4"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/4"	7	8	9

## Joint Seal Damage

Extent (%joints)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low <10% joint length	1	2	3
	Med 10-50% joint length	4	5	6
	High >50% joint length	7	8	9

## Faulting

Extent (Length)				
No Defects	Low <10%	Med 10-30%	High >30%	
Severity	Low < 1/2"	1	2	3
	Med 1/2-1"	4	5	6
	High > 1"	7	8	9

## Patch Deterioration

Extent (Area)				
No Defects	Low <10%	Med 10-30%	High >30%	
Severity	Low-no fault, no settle at perimeter	1	2	3
	Med-fault & settle <1/4" at perimeter	4	5	6
	High-fault & settle >1/4" at perimeter, cracked patch	7	8	9

## Corner Breaks

Extent (% of slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-corner cracks, no spalling or faulting	1	2	3
	Med-crack slightly spalled & faulted <1/4"	4	5	6
	High-crack highly spalled & faulted >1/4"	7	8	9

## Longitudinal Cracks

Extent (% slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/2"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/2"	7	8	9

## Map Cracks

Extent (Area)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-small connected cracks, no spalling	1	2	3
	Med-connected cracks, no spalling	4	5	6
	High-large connected cracks with surface spalling	7	8	9

# Deficiency Ratings With Associated Remaining Service Life

## Asphalt Rating Sheet

Fatigue Cracking		Edge Cracking		Transverse Cracking		Utility Cuts	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20	0	20
1	10	1	12	1	14	1	14
2	8	2	10	2	12	2	12
3	6	3	8	3	10	3	10
4	8	4	10	4	12	4	12
5	6	5	8	5	10	5	10
6	4	6	6	6	8	6	8
7	6	7	8	7	10	7	10
8	2	8	6	8	6	8	6
9	0	9	4	9	2	9	2

Longitudinal Cracking		Block Cracking		Drainage/Roughness/Rutting	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20
1	14	1	12	1	16
2	12	2	10	2	10
3	10	3	8	3	4
4	12	4	10		
5	10	5	8		
6	8	6	6		
7	10	7	12		
8	8	8	6		
9	6	9	2		

## Concrete Rating Sheet

Spalling		Broken Slabs		Transverse Cracks	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20
1	15	1	15	1	18
2	12	2	12	2	15
3	10	3	10	3	12
4	12	4	12	4	15
5	10	5	10	5	10
6	8	6	8	6	6
7	10	7	10	7	10
8	6	8	6	8	4
9	0	9	0	9	0

Joint Seal Damage		Faulting		Patch Deterioration	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	18
1	16	1	15	1	16
2	14	2	12	2	14
3	12	3	10	3	12
4	14	4	12	4	12
5	10	5	8	5	10
6	8	6	6	6	8
7	12	7	10	7	10
8	8	8	4	8	6
9	6	9	0	9	0

Corner Breaks		Longitudinal Cracks		Map Cracks	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	18	0	20	0	20
1	16	1	18	1	18
2	14	2	15	2	15
3	12	3	12	3	12
4	12	4	15	4	12
5	10	5	10	5	10
6	8	6	6	6	6
7	10	7	10	7	10
8	6	8	4	8	4
9	0	9	0	9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Asphalt & Concrete Roads)

RSL	FAILED 0	POOR 1 - 6	FAIR 7 - 12	GOOD 13 - 18	EXCELLENT 19 - 20
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# Deficiency Ratings With Associated Remaining Service Life

## Native Primitive Improved Rating Sheet

Cross Section		Rutting		Roadside Drainage	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	7	1	9	1	8
2	5	2	7	2	4
3	0	3	5	3	0
		4	7		
		5	4		
		6	3		
		7	4		
		8	2		
		9	0		

Potholes		Dust		Corrugations	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	9	1	8	1	9
2	7	2	6	2	7
3	5	3	2	3	7
4	7			4	6
5	4			5	5
6	3			6	5
7	4			7	4
8	2			8	3
9	0			9	0

## Gravel Rating Sheet

Cross Section		Rutting		Roadside Drainage	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	7	1	9	1	8
2	5	2	7	2	4
3	0	3	5	3	0
		4	7		
		5	4		
		6	3		
		7	4		
		8	2		
		9	0		

Potholes		Dust		Corrugations	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	9	1	8	1	9
2	7	2	6	2	7
3	5	3	2	3	7
4	7			4	6
5	4			5	5
6	3			6	5
7	4			7	4
8	2			8	3
9	0			9	0

Loose Aggregate	
Distress Rating	Remaining Service Life
0	10
1	9
2	8
3	7
4	8
5	7
6	6
7	5
8	3
9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Gravel & Native Roads)

RSL	FAILED	POOR	FAIR	GOOD	EXCELLENT
	0	1 - 2	3 - 4	5 - 7	8 - 10